

Live Free/Oral Communications

200 - Neuropsychiatric symptoms influence performance of activities of daily living in symptomatic Alzheimer's Disease

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Background: The triad of symptom groups of Alzheimer's disease (AD) encompasses cognitive impairment (e.g. impaired memory or orientation), neuropsychiatric symptoms like apathy, depressive mood, delusions, hallucinations or anxiety, and functional impairment exclusively in complex activities of daily living (cADL, e.g. preparing meals, managing finances) in minor neurocognitive disorder due to AD and both in complex and basic ADL (bADL, e.g. dressing, toileting) in major neurocognitive disorder due to AD. These functional impairments are widely thought to be exclusively attributable to the cognitive deficits of the disease. Of note, mounting evidence indicates that neuropsychiatric symptoms are very common in AD and pose a heavy burden to both patients and their caregivers.

Research objective: To unravel potential associations between neuropsychiatric symptoms and cADL and bADL in individuals with neurocognitive disorder due to AD by means of machine learning (ML).

Methods: The study included 189 cognitively intact older individuals (CI) and 130 with either minor or major neurocognitive disorder due to AD. Neuropsychiatric symptoms were captured with the Neuropsychiatric Inventory (NPI), covering delusions, hallucinations, aggression, depression, anxiety, apathy, elation, disinhibition, irritability, motor disturbance, nighttime behavioural disturbances and appetite disturbances; cognitive function was assessed with the Cognitive Telephone Screening Instrument (COGTEL); The Bristol ADL scale, an informant-rated measure, was employed for tapping performance of ADL. A variety of ML-models was constructed and trained/tested using a 5-fold cross validation, with SMOTE employed as a remedy for class imbalances. In all cases the features had been selected beforehand based on LASSO technique. The dependent variable was either cADL or bADL (after their discretization based on kMeans quantization). Additionally, the modelling of the diagnosis was also attempted within our ML framework.

Results: Gradient Boosting models performed superiorly. cADL and bADL levels are predicted based on both deficits in cognitive domains and NPI variables with an accuracy of 82.3% and 84.8% respectively.

In addition, diagnosis can be predicted, with an accuracy of 83.5%, based on a model in which NPI and Bristol ADL variables were significant predictors.

Conclusions: cADL- and bADL performance in patients with AD is influenced by both cognitive deficits and neuropsychiatric symptoms.

201 - Care Home Residents as Artists: Digital Connections in the age of Disconnect.

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Abstract:

Throughout the current global pandemic, many people have had to adapt to new ways of interacting through virtual platforms. For those with access to new technologies this transition has been straightforward, but not easy and for those without it, life has become socially isolating, frightening, and lonely. The impact of COVID-19 on the mental health of older adults is a serious concern, particularly for those living in care homes who have been forgotten or neglected by exclusionary government policy. Amnesty International's 2020 report *As if Expendable: The UK Government's Failure to Protect Older People in Care Homes During the COVID-19 Pandemic* provides analysis of the neglect to care and sufficiently support older adults living with dementia in supported living. The results of this inaction to provide care has led to many avoidable deaths, and caused fear and heartache for those who have lost family, friends and colleagues. It is at this moment, during the third UK lockdown that we would like to share a narrative of hope about the actions that we have taken within care home contexts to provide relief, reconnect residents safely with their neighbours, and found creative ways to inclusively provide care, support and celebrations of the identities of people in these contexts who have become statistics in news reports.

Between January and March 2021, undergraduate and postgraduate Applied Theatre students from The Royal Central School of Speech and Drama in partnership with Imperial College Healthcare NHS Trust collaborated with residents from One Housing Association to create and develop bespoke films, poems, songs and virtual reality 360 videos from the safety of their homes to bring to life their stories, hopes and inner artists. In this presentation, we will explore the impact of these projects on the participants' wellbeing and examine the importance of providing older adults opportunities to be creative. We will additionally offer insights into the relationships that were made and developed during the projects, including family connections, intergenerational connections and playful relationships that emerged between the residents themselves and their Carers.

Bibliography:

Amnesty International (2020) *As if Expendable: The UK Government's Failure to Protect Older People in Care Homes During the COVID-19 Pandemic*, available at: <https://www.amnesty.org.uk/files/2020-10/Care%20Homes%20Report.pdf?kd5Z8eWzj8Q6ryzHkcaUnxfCtqe5Ddg6=> [Accessed 30/03/21].

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