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The utility of the mild behavioral impairment-checklist in detecting neuropsychiatric symptoms in mild cognitive impairment and dementia

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Introduction: Dementia is one of the most common neurological disorders globally with cases expected to double by 2031 in Canada alone. Although memory loss is a hallmark symptom, neuropsychiatric symptoms such as anxiety and agitation are early markers. Mild behavioral impairment (MBI) is an at-risk state for dementia characterized by sustained neuropsychiatric symptoms. We developed the MBI checklist (MBI-C) to assess motivation, mood, impulse control, social appropriateness and perception in pre-dementia patients.

Methods: The MBI-C has been administered in the cognitive neuroscience clinic at the University of Calgary, Canada (n=227). We analyzed baseline MBI-C and gold standard neuropsychiatric inventory questionnaire (NPI-Q) scores in relation to MoCA scores in normal cognition (n=38), mild cognitive impairment (n=93) and dementia (n=74) patients using linear regression.

Results: With increasing severity of cognitive diagnosis, neuropsychiatric symptoms worsen (MBI-C and NPI-Q scores increase) and cognition declines (MoCA score decreases). Those with worsened cognition tend to be older, female and have less education. We found for every one point increase in MBI-C score, there is a 0.082 point decrease in MoCA score (p=0.007). For every one point increase in NPI-Q score, there is a 0.192 point decrease in MoCA score (p=0.006). There is no modification but age and education are confounders.

Conclusion: Given that the MBI-C is more sensitive in detecting neuropsychiatric symptoms in pre-dementia populations, there is a shallower point change in MoCA score. The MBI-C may be used to detect neuropsychiatric symptoms in normal cognition and MCI patients. Both cognitive and behavioral scales should be used to assess neuropsychiatric symptoms and cognitive decline in patients.

Biography

Sophie Hu is a MD/MSc candidate completing her MSc in Community Health Sciences. Her research focuses on predicting dementia using emotional and behavioral indicators. She completed her Bachelor of Health Sciences in 2017. Her interests lie in improving patient health through clinical research and global health initiatives. In the local community, she has fundraised over $70 000 for mental health programs. In the global community, she has led hypertension and neuroscience projects in the Dominican Republic and China. She is excited to continue clinical and global health research and would like to begin a biotechnology startup in her career.

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