Letter to the Editor

doi:10.1017/S1041610217000345

Errors on the MoCA's animal-naming: findings from Parkinson's disease patients

We read the findings by Cecato *et al.* (2016) with great interest. In their study, naming the rhinoceros discriminated between patients with amnestic mild cognitive impairment (aMCI) and Alzheimer's disease (AD) but not healthy controls (HC). Of note, HC participants were significantly younger than aMCI and AD patients. All participants were administered the original version of the Montreal Cognitive Assessment (MoCA) instrument.

We recently recruited a group of Parkinson's disease (PD) patients and matched HC as part of an eye-movement study. A total of 45 participants were included: 15 PD with normal cognition (PD-N), 14 PD with mild cognitive impairment (PD-MCI) and 16 age-, education-, and sex-matched HC. All PD-MCI participants at our institution are diagnosed as such according to the Movement Disorders Society level II criteria, which incorporate the MoCA as one of the utilized instruments (Litvan *et al.*, 2012). All participants were asked to name the animals of the original MoCA as well as those in two alternative MoCA versions (i.e. nine animals in total; Nasreddine, 2017). Animals were presented three-at-a-time, as on the paper form.

The percent correct animal-naming was equivalent among the study groups: PD-N 96%, PD-MCI 94%, and HC 98% ($F_{2,44} = 1.2$, $p = 0.3$). Naming errors included the misidentification of the rhinoceros (MoCA 1), hippopotamus (MoCA 2), giraffe (MoCA 2) and donkey (MoCA 3), but did not differ among the participants (see Table S1, available as supplementary material attached to the electronic version of this paper at https://doi.org/10.1017/S1041610217000345).

Several factors may explain the superior performance of our PD patients compared with aMCI and AD patients in the study by Cecato and colleagues (2016). Unlike patients with aMCI and AD, PD patients do not normally exhibit naming deficits until later in the disease process when PD-dementia supervenes (Frank *et al.*, 1996). Our sample did not include patients with PD-dementia.

Our PD participants were generally younger than aMCI and AD patients reported by Cecato *et al.* (2016), were predominantly male and had many years of formal education – all factors that have been found to significantly influence animal-naming on the MoCA (Del Brutto and Wright, 2015). In addition, the sample for our study is from New Zealand, compared with a Brazilian sample reported by Cecato *et al.* (2016). The influence of sociocultural factors on performance has not been extensively evaluated, but Del Brutto and colleagues found that a common mistake made by elderly participants in rural Ecuador was mistaking the rhinoceros for a cow – a much more familiar animal to the studied farming community (2015).

In conclusion, we did not find MoCA animal-naming to discriminate among PD-N, PD-MCI, and HC participants. It is possible that the small number of our sample led to an underpowered study. Future larger studies – especially those that include PD-dementia patients – ought to provide a fuller picture of the discriminatory value of MoCA animal-naming in this disorder.

Conflict of interest

None.

Supplementary material

To view supplementary material for this article, please visit https://doi.org/10.1017/S1041610217000345

References

Cecato, J. F., Martinelli, J. E., Izbicki, R., Yassuda, M. S. and Aprahamian, I. (2016). A subtest analysis of the montreal cognitive assessment (MoCA): which subtests can best discriminate between healthy controls, mild cognitive impairment and Alzheimer's disease? *International Psychogeriatrics*, 28, 825–832. doi: 10.1017/s1041610215001982.

Del Brutto, O. H. and Wright, C. (2015). Animal naming in the Spanish version of the montreal cognitive assessment in rural Latin American communities: a cautionary note. *Geriatrics & Gerontology International*, 15, 126–127.

Frank, E. M., McDade, H. L. and Scott, W. K. (1996). Naming in dementia secondary to Parkinson's, Huntington's, and Alzheimer's diseases. *Journal of Communication Disorders*, 29, 183–197.

Litvan, I. *et al.* (2012). Diagnostic criteria for mild cognitive impairment in Parkinson's disease: movement disorder society task force guidelines. *Movement Disorders*, 27, 349–356.

Nasreddine, Z. (2017). MoCA full tests. Available at http://www.mocatest.org/paper-tests/moca-test-full/; last accessed 05 January 2017.

Downloaded from https://www.cambridge.org/core. Canterbury Medical School, on 11 Mar 2017 at 02:52:09, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1041610217000345

Yassar Alamri,[1] Tim Anderson,[2] John Dalrymple-Alford[3] and Michael Macaskill[4]

[1] New Zealand Brain Research Institute and Canterbury District Health Board, Christchurch, New Zealand
Email: yassar.alamri@nzbri.org

[2] New Zealand Brain Research Institute and University of Otago, Christchurch, New Zealand

[3] New Zealand Brain Research Institute and University of Canterbury, Christchurch, New Zealand

[4] New Zealand Brain Research Institute and University of Otago, Christchurch, New Zealand

Downloaded from https://www.cambridge.org/core. Canterbury Medical School, on 11 Mar 2017 at 02:52:09, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1041610217000345