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Ziad Nasreddine & Howard Chertkow talk with *ScienceWatch.com* and answer a few questions about this month's Emerging Research Front Paper in the field of Social Sciences, general.

Article: The Montreal cognitive assessment, MoCA: A brief screening tool for mild cognitive impairment
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SW: Why do you think your paper is highly cited?

The Montreal Cognitive Assessment (MoCA) was created to respond to the need for a short but sensitive cognitive screening tool for busy practices. Clinicians have been using the Mini Mental State Examination (MMSE), which was published and widely used since 1975. The MMSE, which is a 30-point cognitive screening test, has very limited sensitivity to detect mild impairment in cognition since it was developed as a screening measure for dementia.

With new treatments emerging to treat Alzheimer's disease (AD), a trend has emerged to try and capture the earliest signs of cognitive impairment that could lead to dementia. This very early transition stage to dementia is now known as Mild Cognitive Impairment (MCI). Many individuals with MCI progress to AD within four years of their MCI diagnosis, and we perceived that there was an urgent need for a more sensitive test to detect cognitive impairment at this stage.

The MoCA test design, user friendliness, and the robust confirmation of its validity to detect MCI and early AD compared to the MMSE has made this test very valuable to clinicians around the world, and has also made the validation study article one of the most-cited in the MCI literature. In addition, our decision to make the MoCA freely and easily available online to clinicians, across many languages, has dramatically increased its utility around the world.

SW: Does it describe a new discovery, methodology, or synthesis of knowledge?

The MoCA test (*Copyright*: Z. Nasreddine, M.D.), was developed from a collection of short cognitive subtests, that were selected and adapted to evaluate various cognitive domains rapidly and with high sensitivity to detect subtle cognitive impairment.

SW: Would you summarize the significance of your paper in

layman's terms?

Our study showed that the MoCA is able to detect 90% of subjects with mild cognitive impairment compared to only 18% for the more commonly known test, the MMSE. It is also able to detect 100% of subjects with AD compared to 78% for the MMSE. As most subjects in the MCI stage will convert over time to AD, the ability of the MoCA to identify subjects with high risk for AD will enable physicians to monitor them closely and treat them earlier.

Coauthor
Howard Chertkow

SW: How did you become involved in this research and were any particular problems encountered along the way?

The search for a better cognitive assessment tool began when Ziad S. Nasreddine, working in a busy community neurology clinic, was pressed for time and unable to evaluate patients in a timely manner. A quick cognitive screening tool adapted for a busy practice was clearly needed.

Knowing the limitations of the MMSE in terms of limited sensitivity for mild cognitive impairment and the restricted scope of cognitive domains tested, the need was perceived to develop a more comprehensive and sensitive cognitive screening test, which would be short and adapted to a busy outpatient clinic. We felt that since we urgently needed such a screening test, that other clinicians likely had the same needs and would welcome a well-validated test they could easily use.

SW: Where do you see your research leading in the future?

The MoCA is now being tested in other neurological diseases such as Parkinson's disease, multiple sclerosis, and stroke etc., and has proved very sensitive in detecting mild cognitive impairment in these conditions. The test will likely be studied in patients with traumatic brain injury, psychiatric disease, and attention deficit disorders. We are working to develop multiple forms of the test for repeated use, and computerized versions of the test may become available. The test may be used to assess treatment efficacy for various medical and non-medical interventions.

SW: Do you foresee any social or political implications for your research?

Patients in whom we detect early cognitive impairment using the MoCA may be better protected to prevent injury or liability. The following abilities would be closely monitored: finance management, medication intake, driving abilities, and decision-making.

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KEYWORDS: MOCA; MILD COGNITIVE IMPAIRMENT; ALZHEIMER'S; COGNITIVE ASSESSMENT.

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