
Development of cognitive screening test for the severely hearing impaired: Hearing-impaired MoCA.

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Abstract

OBJECTIVES: To develop a version of the Montreal Cognitive Assessment (MoCA) to be administered to the severely hearing impaired (HI-MoCA), and to assess its performance in two groups of cognitively intact adults over the age of 60.

STUDY TYPE: Test development followed by prospective subject recruitment.

METHODS: The MoCA was converted into a timed PowerPoint (Microsoft Corp., Redmond, WA) presentation, and verbal instructions were converted into visual instructions. Two groups of subjects over the age of 60 were recruited. All subjects passed screening questionnaires to eliminate those with undiagnosed mild cognitive impairment. The first group had normal hearing (group 1). The second group was severely hearing impaired (group 2). Group 1 received either the MoCA or HI-MoCA test (T1). Six months later (T2), subjects were administered the test (MoCA or HI-MoCA) they had not received previously to determine equivalency. Group 2 received the HI-MoCA at T1 and again at T2 to determine test-retest reliability.

RESULTS: One hundred and three subjects were recruited into group 1, with a score of 26.66 (HI-MoCA) versus 27.14 (MoCA). This was significant ($P < 0.05$), but scoring uses whole numerals and the 0.48 difference was found not clinically significant using post hoc sensitivity analyses. Forty-nine subjects were recruited into group 2. They scored 26.18 and 26.49 (HI-MoCA at T1 and T2). No significance was noted ($P > 0.05$), with a test-retest coefficient of 0.66.

CONCLUSION: The HI-MoCA is easy to administer and reliable for screening cognitive impairment in the severely hearing impaired. No conversion factor is required in our prospectively tested cohort of cognitively intact subjects.

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