

The European Cross-Cultural Neuropsychological Test Battery (CNTB)

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Background: With the changing demographics of Europe's elderly populations, the number of elderly with dementia is expected to increase considerably. Due to the specific history and conditions of some immigrant populations, this increase may be more pronounced in these populations. Moreover, validated neuropsychological tests for cross-cultural cognitive assessment of the older persons belonging to ethnic and linguistic minorities are generally lacking in Europe. The aim of this study was to examine the cross-cultural validity of the European Cross-Cultural Neuropsychological Test Battery (CNTB) in native Danes and immigrants from former Yugoslavia, Poland, Pakistan and Turkey.

Methods: Between January 2012 and January 2014, Turkish, Pakistani, former Yugoslavian and Polish immigrants as well as native Danes were recruited. All subjects underwent an approximately one and a half hour assessment, including a structured demographic and health interview, measures of acculturation, screening for depression and the CNTB. The CNTB consists of 12 neuropsychological tests covering multiple cognitive domains: global cognitive function, memory, language, executive functions and visuospatial functions. All subjects were assessed in their primary language. Subjects with conditions known to affect neuropsychological test performance were subsequently excluded.

Results: Of the 200 subjects included in the study, 26 were native Danes and 17 were immigrants from former Yugoslavia, 33 from Poland, 47 from Pakistan and 77 from Turkey. Significant age ($F = 6.705$, $p < 0.001$) and educational ($F = 67.250$, $p < 0.001$) differences were present between the groups.

Although significant differences in test performances were found between the groups on most cognitive measures, regression analyses revealed that this was due to educational and age differences rather than cultural background (explaining $< 3\%$ of the variance in test performances).

Conclusions: The cross-cultural validity of the CNTB was found to be excellent, but age and education have to be taken into consideration when interpreting test scores. Future studies are needed to establish the clinical utility and diagnostic accuracy of the CNTB.