MONTREAL COGNITIVE ASSESSMENT: VALIDATION STUDY FOR MILD COGNITIVE IMPAIRMENT AND ALZHEIMER DISEASE.

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WHAT IS PAPER ABOUT?

- Montreal Cognitive Assessment (MoCA) – cognitive screening test
- Validate the MoCA for cognitive screening of Mild Cognitive Impairment (MCI) and Alzheimer disease (AD)

Source: https://khn.org/news/article/alzheimers-drug-targets-people-with-mild-cognitive-impairment-what-does-that-mean/

DESCRIPTION OF SUBJECTS

- Mild Cognitive Impairment (MCI)
- Alzheimer disease (AD)
- Montreal Cognitive Assessment (MoCA)
- Importance of screening of MCI and its differentiation from age-related decline
- Mini-mental State Examination (MMSE) versus MoCA
    - MoCA allows a more comprehensive assessment of the major cognitive domains

Source: https://www.medpagetoday.com/resource-centers/contemporary-advances-epilepsy/preventing-cognitive-impairment-children-epilepsy/2089

INTERPRETATIONS AND USES OF THE TEST SCORES

- MoCA: 6 cognitive domains
  - Executive functions
  - Visuospatial skills
  - Short-term memory
  - Language
  - Attention, concentration, and working memory
  - Temporal and spatial orientation
- Participants -> 3 sub-groups
  - MCI – 90 patients
  - AD – 90 patients
  - Control group – 180 cognitive healthy adults (C-MCI: 90 adults, C-AD: 90 adults)
- MoCA versus MMSE
  - Both has a total 30 points (higher scores indicating better cognitive performance)
  - Different cut-off points

VALIDATION PROCEDURES

- Evidence based on test content
  - Relation between test content (6 cognitive domains) and the construct (to screen milder forms of cognitive impairment)
  - MoCA has high sensitivity in the detection of MCI and AD patients
- Evidence based on response processes
  - Sub-groups differences (correlation between MoCA and MMSE for each sub-groups: MCI, AD, C-MCI, C-AD)
- Evidence based on relations to other variables
  - Convergent validity -> correlation between MoCA and MMSE: r=0.849
  - Diagnostic accuracy for both tests (Sensitivity, specificity, NPV, PPV, etc)
- Evidence based on consequences of testing
  - To prove that test is better than other test (MoCA versus MMSE)
  - Diagnostic accuracy for both MoCA was higher than MMSE

Sensitivity and specificity are the probability of a correct test result in subjects with and without a condition, respectively. (https://analyse-it.com/docs/user-guide/diagnostic-performance/diagnostic-accuracy#:~:text=Diagnostic%20accuracy%20measures%20the%20ability,True%20positive%20(TP))

RESULTS AND EVALUATION OF THE VALIDITY

- MoCA is better cognitive screening tool for the detection of MCI and AD conditions to compare with MMSE
- MoCA is recommended cognitive screening tool
- Higher capacity of the MoCA and better diagnostic accuracy to discriminate between normal aging and pathologic cognitive decline
- Convergent validity -> Correlation coefficient between 2 cognitive screening tools was moderate to good