Neurocognitive Assessments for Alzheimer's Disease Detection: A Systematic Review

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Background

- There is the need for effective detection methods for Alzheimer's Disease and Related Dementias (ADRD) (De Roeck et al., 2019).
- Neurocognitive assessments provide a useful tool in detecting possible Mild Cognitive Impairment (MCI) or ADRD, but a comprehensive evaluation of their reliability and validity is needed (De Roeck et al, 2016).

Goal

- Systematically review the effectiveness of neurocognitive screening assessments in detecting ADRD

Implementation

- Conducted a comprehensive literature search across PubMed, PsycINFO, and Cochrane Library databases.
- Our review synthesizes findings after evaluating twenty studies, encompassing a diverse range of neurocognitive assessments.
- Selected six papers that had sensitivity and specificity information for detecting ADRDs (Figure 1), to show the effectiveness of their screening techniques.

Outcomes

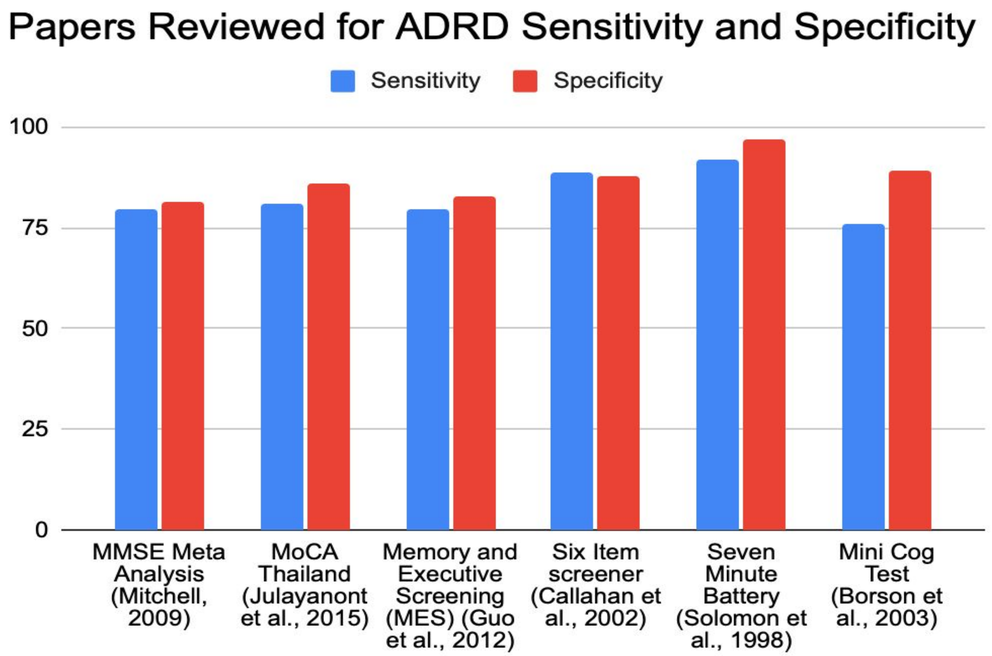
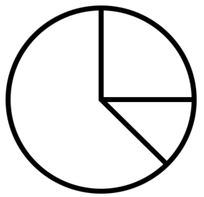


Figure 1. Sensitivity and Specificity information for detecting Alzheimer's Disease and Related Dementias from papers describing six different neurocognitive assessments.

Neurocognitive Assessments evaluated:
Mini Mental State Examination (MMSE)
Montreal Cognitive Assessment (MoCA)
Memory and Executive Screening (MES)
Six Item Neurocognitive Screener
Seven Minute Neurocognitive Battery
Mini-Cog Test



Next Steps

- The Seven-Minute Battery provided the highest sensitivity and specificity, providing evidence as a promising neurocognitive assessment tool (Solomon et al., 1998).
- Recommend standardized protocols for future research to enhance comparability and reproducibility. One way to do this is to obtain normative data from different groups of people (Heaton et al., 2009).
- Advocate for the incorporation of novel technologies in neurocognitive assessments for improved diagnostic accuracy. (Cushman et al., 2008)
- Emphasize the importance of addressing limitations such as heterogeneity in study designs and participant characteristics in future studies.

Conclusion

- While certain neurocognitive assessments show promise for AD detection, careful consideration of various factors influencing their performance is crucial.
- Acknowledgment of limitations underscores the nuanced interpretation of findings and the necessity for continued investigation.

References

References are located by scanning QR code