

333 - The advantages of a double threshold MoCA (Montreal Cognitive Assessment) for triaging patients to a memory clinic.

Géraud Dautzenberg, MD, MSc; Jeroen Lijmer, MD; Aartjan T.F. Beekman, MD

The MoCA was developed as a screening tool for mild cognitive impairment (MCI) and mild dementia (MD) and validated in different settings. At the original suggested cutoff of <26 , with 30 being flawless, it has a high sensitivity for detecting MCI and MD. The specificity is argued in clinical practice. Its high sensitivity makes it a good screener for identifying most MD-patients, however, for selecting those in need of a scarce neuropsychological assessment (NPA), the moderate specificity gives too many false positives. It is repeatedly suggested to lower the cut-off to <21 , resulting in higher specificity for identifying MD. But lowering the cut-off, increasing the false negatives, will not decrease the number of classification errors. One needs to triage with a cut-off that finds all patients at high risk of MD without referring too many who are not (yet) in need of a NPA. A difficulty is who to consider at risk, as definitions for illnesses (e.g. MD) do not always define health at the same time and thereby create subthreshold disorders. As MCI is a state of subthreshold dementia -of which 40% worsens 40% stabilizes 20% recovers, therefore justifying its own policy -it is essential to differentiate it from MD and no-cognitive impairment (NoCI). Double thresholds are a solution by using one threshold for health and one for illness. Especially where classifications create subthreshold disorders, regardless of whether these are disorders in their own right or are merely (minor) forms of major disorders. A double threshold MoCA gives the best accuracy and raises the opportunity to differentiate the clinical and subclinical states to their appropriate domain and hence their appropriate policy. Next to these clinical aspects, shown in our study, a double threshold also reduces random classification errors. By applying an uncertainty interval -most errors appear from 21 to 26- the PPV and NPV improves and becomes less dependent of the prevalence. Two thresholds, with <21 selecting patients for NPA and ≥ 26 for clearing patients, gives the best results and achieves two aims at once. It also identifies most MCI ($21 < 26$) who's intermediate state justifies active monitoring.