Statistics

Statistical analyses were conducted using the R ‘equate’ package [18]. The overall agreement between the two scales was assessed using Pearson’s product-moment correlation coefficient (r). However this estimation has been criticised by Bland and Altman [19] as misleading and therefore the concordance correlation coefficient (CCC) was also calculated [20]. The CCC measures agreement by assessing how well the relationship between the measurements is represented by a line through the origin at an angle of 45 degrees (as would be generated if the two measurements generated identical results).

To convert MoCA scores to MMSE (and vice versa), we generated an equating table to link the two scales. The conversions were extracted from a random population of the studied group and then tested in the remaining sub-population. Given that both scales have the same lower and higher scores but with different difficulty we used the Circle‐Arc Method [21]. However, we also applied other methods of equating models (linear, mean, and equipercentile) and compared the standard errors of each model after bootstrapping.

By doing this we made the following assumptions: a) that both scales measure the same latent construct (cognition), b) that the two scales are not free of errors but the errors are small (both scales must have high reliability), and c) that the ratings have been conducted by experts and the conversion rule will apply again in measurements that have been performed by experts.