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Validation of MoCA-MMSE Conversion Scales in Korean Patients with Cognitive Impairments

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Conflict of Interest
The authors have no financial conflicts of interest.

ABSTRACT

Background and Purpose: Two conversion scales between the Mini-Mental State Examination (MMSE) and the Montreal Cognitive Assessment (MoCA) have been validated for Korean patients with Parkinson's disease. The aim of the present study was to validate these conversion scales for all patients with cognitive impairments regardless of dementia subtype.
Methods: Medical records of 323 subjects who completed both MMSE and MoCA on the same day were retrospectively reviewed. Mean, median, and root mean squared error (RMSE) of the difference between true and equivalent MMSE scores were calculated. Intraclass correlation coefficients (ICCs) between true and equivalent MMSE scores were also calculated. The validity of MoCA-MMSE conversion scales was evaluated according to educational level (low educated: ≤6 years; high educated: ≥7 years) and subtypes of cognitive impairment.
Results: The difference between true and equivalent MMSE scores had a median value of 0, a mean value of 0.19 according to the van Steenoven scale, a mean value of 0.57 according to the Lawton scale, RMSE value of 2.2 according to the van Steenoven scale, and RMSE value of 0.42 according to the Lawton scale. Additionally, ICCs between true and equivalent MMSE scores were 0.92 and 0.90 on van Steenovan and Lawton conversion scales, respectively. These results were maintained in subgroup analyses.
Conclusions: Findings of the present study suggest that both van Steenovan and Lawton MoCA-MMSE conversion scales are applicable to transforming MoCA scores into MMSE scores in patients with cognitive impairments regardless of dementia subtype or educational level.

Keywords: Mini Mental State Examination; Montreal Cognitive Assessment; Cognitive Impairments; Dementia

INTRODUCTION

As dementia is becoming a major health issue worldwide, it has been increasingly important to develop and validate effective tools for assessing cognitive function in aging populations. Although several types of imaging technology and a variety of biomarkers have recently emerged, brief cognitive screening tests remain the most important component of a dementia diagnosis. The most widely used cognitive screening instrument is the Mini-Mental State Examination (MMSE) which has been very well validated by previous studies.[1-4] However, MMSE is under copyright restrictions.[5,6] In addition, it is unsuitable for detecting

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