Mini-Mental State Examination (MMSE)

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Purpose A simplified version of a much more extensive instrument for assessing cognitive mental status, the MMSE was designed to accommodate patients who cannot maintain attention for long periods, particularly elderly individuals with delirium or dementia. The instrument is divided into two parts, both of which are administered by a clinician or nurse: The first concerns the respondent's memory, attention span, and orientation in location and time, while the second asks the respondent to name certain objects, repeat phrases, follow verbal directions, and to copy both a sentence and a figure using pencil and paper. The questionnaire can be used as a measure of the severity of cognitive impairment at a single moment, or it can be employed across different times and treatments to reflect an individual's changing cognitive abilities. As disturbed sleep is quite prevalent in elderly individuals – particularly those with dementia [1] – a cognitive status exam like the MMSE may be especially useful for sleep specialists attempting to address the diagnosis and treatment of this patient population.

Population for Testing Though the test was designed with elderly individuals in mind, it has been validated on a variety of adult patient populations, including those presenting with depressed and manic affective disorders, schizophrenia, and drug abuse issues.

Administration Requiring between 10 and 15 min for completion, the test is administered both verbally and using pencil and paper by trained third party. To purchase the scale from its publishers, individuals are required to complete a "PAR Customer Qualification Form for Medical and Allied Health Professionals," proving that they are trained in the administration, scoring, and interpretation of psychometric measures, or that they possess equivalent experience in the field.

Reliability and Validity An initial psychometric study performed by Folstein and colleagues [2] found a test-retest reliability of .89 for the same tester and a reliability of .83 when two different examiners were used. More recently, the instrument has also been validated for use with cancer patients [3], and individuals with acquired brain injury [4].

Obtaining a Copy An example of the original questionnaire is available from Folstein and colleagues [2]. The test is under copyright and recent versions can be purchased from publishers *Psychological Assessment Resources* online at www.minimental.com.

Scoring The instrument's 11 items are scored using Likert-type scales that range from two to six options in length. Higher scores indicate better cognitive function, with a maximum score of 30. Though developers initially suggested a cutoff score of 24, more recent normative data and cutoff scores are available for a variety of different age groups and education levels in a clinical guidebook published by the developers.

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Additionally, scoring software can be purchased that generates detailed reports based on respondent results.

References

1. Ancoli-Israel, S., Poceta, J. S., Stepnowsky, C., Martin, J., & Gehrman, P. (1997). Identification and treatment of sleep problems in the elderly. *Sleep Medicine Reviews, 1*(1), 3–17.
2. Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). "Mini-mental state:" a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research, 12*(3), 189–198.
3. Mystakidou, K., Tsilika, E., Parpa, E., Galanos, A., Vlahos, L. (2007). Brief cognitive assessment of cancer patients: evaluation of the mini-mental state examination (MMSE) psychometric properties. *Psycho-Oncology, 16*(4), 352–357.
4. Elhan, A. H., Kutley, S., Kucukdeveci, A. A., Cotuk, C., Ozturk, G., Tesio, L., & Tennant, A. (2005). Psychometric properties of the mini-mental state examination in patients with acquired brain injury in Turkey. *Journal of Rehabilitation Medicine, 37*(5), 306–311.

Representative Studies Using Scale

Slavin, M. J., Sandstrom, C. K., Tran, T. T., Doraiswamy, P. M., & Petrella, J. R. (2007). Hippocampal volume and the mini-mental state examination in the diagnosis of amnestic mild cognitive impairment. *American Journal of Roentgenology, 188*(5), 1404–1410.

Sinforiani, E., Zangaglia, R., Manni, R., Cristina, S., Marchion, E., Nappi, G., Mancini, F., & Pacchetti, C. (2006). REM sleep behavior disorder, hallucinations, and cognitive impairment in Parkinson's disease. *Movement Disorders, 21*(4), 462–466.