

**International Society for CNS Clinical Studies & Methodology
Assessment of Cognitive Dysfunction in Schizophrenia:
Conceptual & Methodological Issues
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Psychometric Issues**

This presentation focused on two psychometric issues affecting the selection of a neurocognitive test battery to assess outcome in clinical trials in schizophrenia.

Issue 1: One approach to selecting a neurocognitive battery has been to use factor analysis to determine what cognitive domains best characterize or describe performance of persons with schizophrenia on cognitive measures. The motivating rationale is that it is desirable to have a battery of tests that comprehensively assesses the major cognitive domains with minimal redundancy to increase efficiency of time and resource use. Unfortunately, there are less than a dozen published factor analytic studies of schizophrenia and most of them are plagued by statistical and methodological flaws, e.g., small samples, the inappropriate use of orthogonal factor rotations, test heterogeneity, and the over-extraction of factors, and inadequate subject-to-variable ratios. Given these limitations, it does appear that there are separable cognitive domains in schizophrenia however there are moderate to high intercorrelations among some domains. Recommendations included: (a) consider re-analyzing current databases to address identified statistical shortcomings of original analysis; (b) consider explicitly modeling the correlated structure of cognitive tests via global composites or canonical variates when assessing outcome; (c) comprehensively assessing cognition does not identify which tests have the highest sensitivity in detecting treatment response. Hence, future studies might refine test batteries by determining which tests are most sensitive to change.

Issue 2: Cognitive tests are not “passive” procedures, i.e., they require that examinees give their “best effort” when completing them. This is some evidence that there may be a subgroup of persons with schizophrenia who fail very simple cognitive tests that are easily passed by even by persons with significant acquired brain dysfunction (Gorissen et al., in press). Failure on these “effort tests” tends to be associated with poor performance on standard cognitive measures. Poor effort also appears to be associated with negative symptoms (Gorissen et al., in press). Consequently, it is difficult to draw conclusions regarding the actual extent and nature of cognitive impairment in the context of poor effort because it may reflect a basic failure to simply engage in the assessment process. Recommendations include (a) consider including currently available measures of effort in any test battery assessing treatment response in schizophrenia; (b) consider re-analyzing existing databases to assess the impact of effort.

Reference

Gorissen, M, Sanz, J. C., & Schmand, B. (in press). Effort and cognition in schizophrenia. *Schizophrenia Research*.