Why Are Cognition Studies in Schizophrenia Failing?

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Introduction: Cognitive impairments are common in schizophrenia and impact disproportionately on real world functioning.Our current antipsychotic-medications do not offer any significant benefit for cognitive deficits.Psychological approaches have some positive-effects but require an integrated psychological and occupational focus to optimise cognitive performance,which has been difficult to implement in routine clinical-practice.Contemporary novel investigational drugs trialled in schizophrenia have failed to show any significant benefit for cognitive-symptoms;despite showing promise in earlier phase-2-studies(Goff-et-al.,2011;Choi-et-al.,2013).Recent data has suggested that there may be a subset of patients responding to interventions to improve cognitive performance(Vercammen-et-al,2011;Murthy-et-al,2012).

Objectives: We review the literature and use our own cognitive-training-data to examine how one might define this group,and propose a methodology for future clinical-studies of cognition in schizophrenia,predicated on the use of adaptive-designs incorporating subtyping into the fabric of the studies.

Aims: To categorise schizophrenia patients according to baseline performance and to investigate if this differentiation will predict their response to cognitive training(CT).

Methods:47 schizophrenia-patients were recruited and classified in'learners'and'non-learners'based on learning-performance on
day1-baseline-assessment measured by Mathew´s-correlation-coefficient and completed CT.We used multilevel-regressions to investigate differences between the defined groups in learning.

Results: According to MCC-performance at day-1(session two),24 participants were classified as'learners'and 23 as'non-learners'.We found significant-differences in response to CT-between the defined groups($p < 0.0001$).
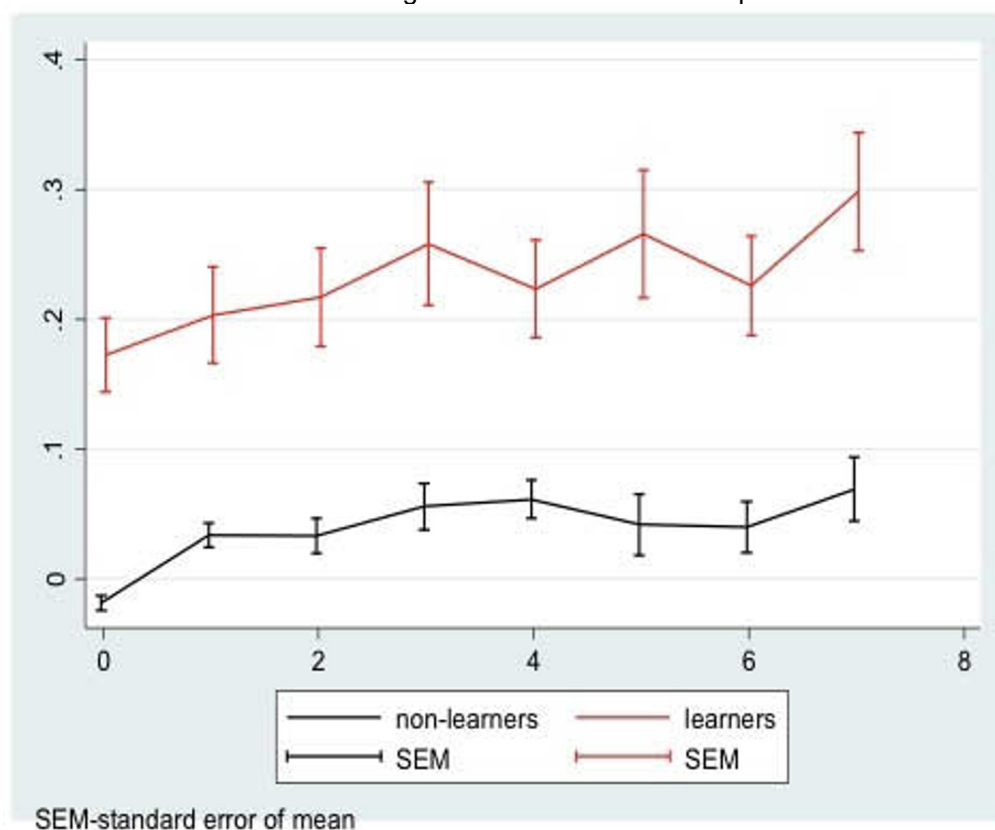

SEM-standard error of mean

Figure 1. Results based on performance

Conclusions: We were able to distinguish between responders/non-responders on baseline-assessment.Our results showed that CT-enhanced-performance in the 'learners-group'relative to'non-learners-group'.Trial-design needs to be adaptive to optimise outcomes in trials modifying cognitive-dysfunction-in-schizophrenia.One option would be to stratify the-sample on their early-baseline ability to respond to cognitive training-and to treat these cognitive-responders with medication and non-responders with an enhanced-programme of psychological-and-occupational-therapy.