

had a statistically significant strong, positive relationship before ( $r=.66$ ) and after ( $r=.88$ ) treatment (all  $n=65$  and  $p<.001$ ).

**Conclusions:** The BSI-18 can detect changes in different domains of psychological distress as a function of TMS treatment. Unexpectedly, TMS patients with elevated levels of anxiety responded well to treatment despite comorbid anxiety often being associated with less favorable outcomes in treatment trials. The positive relationship of the BSI-D and PHQ-9 before and after treatment suggests the use of the BSI as a valid, additional measure of depressive symptoms.

**Categories:** Mood & Anxiety Disorders

**Keyword 1:** depression

**Keyword 2:** treatment outcome

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## 51 The Minimal Effect of Depression on Cognitive Functioning when Accounting for Performance Validity

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**Objective:** While much research has demonstrated a relationship between depression and cognitive deficits, most studies have neglected to include measurements of performance validity. The very small number of studies that have examined this relationship when accounting for performance validity have found that the relationship between depression and cognition is small or nonsignificant. The current study examined the relationship between depression (assessed through both clinical interview and self-report symptom measures) and multiple domains of cognition after accounting for noncredible performance on neuropsychological testing.

**Participants and Methods:** Participants were veterans referred for outpatient clinical

evaluation. Among other tests that varied across patients, the neuropsychological battery included: California Verbal Learning Test - second edition (CVLT-II) total immediate recall across trials 1-5, short delay free recall, and long delay free recall; Trail Making Test; FAS and Animal Fluency; Rey-Osterrieth Complex Figure Test (ROCF) copy and 3-minute delay recall; and Wisconsin Card Sorting Test (WCST) categories completed, total errors, and percent perseverative errors. These tests represent domains that have previously been examined in relation to depression (e.g., memory, processing speed, executive functioning). Evaluations were conducted for clinical purposes, so that some individuals who were not administered certain tests have missing data. The first set of regression analyses ( $N=206$ ) included age, sex, and education at Step 1, Beck Depression Inventory-2 (BDI-2) total score at Step 2, and pass or failure of Trial 1 of the Test of Memory Malingering (TOMM) at Step 3 as predictors of performance on the 12 test indices. The second set of regression analyses ( $N=559$ ) mirrored the first but with Major Depressive Disorder (MDD) diagnosis at Step 2 instead.

**Results:** In the first set of analyses, after including TOMM in the model, only the relationship between BDI-2 and verbal fluency remained significant, but did not survive Bonferroni correction ( $p<.004$ ). In the second set of analyses, before including the TOMM, MDD diagnosis was significantly related only to worse performance on Trails A and CVLT-II Short and Long Delay Free Recall, with small effect sizes ( $rp=.06-.15$ ). When TOMM Trial 1 was included in the model, MDD diagnosis became a nonsignificant predictor of CVLT-II Long Delay Free Recall but remained a significant predictor for Trails A and CVLT-II Short Delay Free Recall ( $p<.05$ ). After Bonferroni correction ( $p<.004$ ), with TOMM Trial 1 included in the model, MDD diagnosis remained a significant predictor only of CVLT-II Short Delay Free Recall, with a small effect size ( $rp=.17$ ).

**Conclusions:** After accounting for noncredible performance, there was little evidence for a relationship between depression diagnosis or symptoms and many cognitive domains. These results suggest that previously reported effects of depression on cognition are not mainly due to underlying neurological mechanisms, but rather to motivational factors. Future research could focus on the potential psychological mechanisms (e.g., negative attitudes, expectancy bias, low motivation, etc.) driving the

relationship between depression and low effort on cognitive testing. If replicated, the current findings could be valuable to clinicians treating depressed individuals who have concerns about their cognitive functioning, by indicating psychoeducation and reassurance.

**Categories:** Mood & Anxiety Disorders

**Keyword 1:** cognitive functioning

**Keyword 2:** depression

**Keyword 3:** performance validity

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## 52 Internalizing Psychopathology is Highly Related to Subjective Cognitive Impairment and the Discrepancy Between Objective and Subjective Cognitive Impairment: A Preliminary Cross-Sectional Study.

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**Objective:** Eliciting perceived cognitive complaints is a routine part of a clinical neuropsychological evaluation, presumably because complaints are informative of underlying pathology. However, there is no strong empirical support that subjective cognitive impairment (SCI) is actually related to objective cognitive impairment as measured by neurocognitive tests. Instead, internalizing psychopathology is thought to predominately influence the endorsement of SCI. Specifically, individuals with greater symptoms of depression and anxiety, when accounting for comorbidities, have a higher disposition to overestimate their degree of cognitive impairment as compared to objective testing. Yet, there are few existing studies that have determined which factors influence both SCI and the discrepancy between subjective and objective cognitive impairment in general outpatient populations. The current study examined the relationship between subjective and objective cognitive impairment in a clinically diverse sample of outpatients. We additionally explored the associations between

SCI and relevant intrapersonal factors including internalizing psychopathology, number of medical comorbidities, and demographics. Finally, we quantified the degree of discrepancy between subjective and objective impairment and examined this discrepancy in relation to the intrapersonal factors.

**Participants and Methods:** The sample comprised 142 adult women and men (age range 18 – 79 years) seen in an outpatient neuropsychology clinic for a diverse range of referral questions. Scores on the cognition portion of the WHO Disability Assessment Schedule (WHODAS 2.0) were used to index SCI. A composite score from 14 measures across various domains of cognitive functioning served as an objective measure of cognitive functioning. Internalizing psychopathology was measured via a standardized composite of scores from screening measures of anxiety and depression. Medical comorbidities were indexed by the number of different ICD diagnostic categories documented in patients' medical records. Demographics included age, sex, race, and years of formal education. Objective-subjective discrepancy scores were computed by saving standardized residuals from a linear regression of neurocognitive test performance on the WHODAS 2.0 scores.

**Results:** A hierarchical linear regression revealed that objective cognitive impairment was not significantly related to SCI ( $p > .05$ ), explaining less than 2% of the variance in SCI ratings. Likewise, participants' demographics (age, sex, education, race) and number of comorbidities were not significantly related to their SCI ratings, explaining about 6% of the variance. However, participants' level of internalizing psychopathology was significantly associated with SCI ( $F[10, 131] = 4.99, p < .001$ ), and explained approximately 20% of the variance in SCI ratings. Similarly, the degree of discrepancy between subjective and objective cognitive impairment was primarily influenced by internalizing psychopathology ( $F[9, 132] = 5.20, p < .001, R^2 = 21%$ ) and largely unrelated to demographics and number of comorbidities, which explained about 6% of the variance.

**Conclusions:** These findings are consistent with prior research suggesting that SCI may be more indicative of the extent of internalizing psychopathology rather than actual cognitive impairment. Taken together, these results illuminate potential treatment and diagnostic implications associated with assessing