# Using self-reported functioning measures to identify MDD patients with impaired performance based functional capacity

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**Methodological Question**. Is it possible to screen for MDD patients with impairments in functional capacity (FC) through self-reported measures focused on everyday outcomes? This could be a strategy that would bypass the risk of censoring patients with higher FC measures, loss of sample size and power.

**Introduction & Aim**

In patients with schizophrenia, levels of impairment on functional capacity (FC) measures are consistently high. However, in patients with MDD, there is a larger group with smaller impairments, meaning that ceiling effects are possible, including in some patients who are currently employed. Using a performance-based FC measure to select patients entails two challenges. First, it is not known how many cases with high FC scores would need to be censored. Second, the possibility of bias with sites influencing baseline FC scores can damage the integrity of the study. In these analyses, we examined the use of a self-reported functional measure, the Work Limitations Questionnaire (WLQ) to identify patients with greater impairments on FC and evaluated their response to treatment on cognitive measures.

**Methods**

In a large-scale depression clinical trial, patients (N=529) were examined with the UCSD Performance-based Skills Assessment VIM & Brief Versions, Digit Symbol Substitution Test (DSST) and other clinical measures. UPSA-B aligned (UPSA-B) scores were derived from both VIM & Brief versions. There were 3 arms in this trial (vortioxetine 10-20mg/d, duloxetine 60mg/d & placebo). Patients who were employed (n=207) also completed the WLQ. We examined the score distributions on the UPSA-B, in terms of baseline scores and treatment response, as a function of employment status and scores on the WLQ in employed patients.

**Results**

Employed patients had higher UPSA-B scores at baseline than unemployed patients (80 vs 77). Among the employed patients, scores of greater than 13 on the WLQ (higher scores reflect more impairment) were associated with more impairment on the UPSA-B (78 vs 82). Patients with larger impairments on the WLQ also showed larger treatment-related improvements on the UPSA-B: a 5.4-point improvement on vortioxetine relative to placebo ($p<0.05$), while patients with lower impairments on WLQ had a 1.8-point improvement ($p>0.05$) on the UPSA-B. Further, patients with higher scores on the UPSA-B (85 or higher, within one Standard Deviation of ceiling) at baseline had lower overall improvement on the WLQ with treatment compared to those with <85 scores on baseline UPSA-B: 0.05- vs 1.1-point improvement.

**Conclusions**

Employed patients with depression, who have lower levels of disability at baseline, may need additional screening to determine if they are likely to manifest ceiling effects on critical FC outcome measures. A self-reported measure of impairments in vocational functioning, WLQ identified a group of patients with lower scores in performance-based FC measures. These patients also manifested larger overall treatment-related improvement compared to those with higher FC scores. As a result, including patients with WLQ scores >13 may reduce the need for censoring patients because of ceiling effects on FC

measure and thus overcome potential loss of study power. In this analysis, employed patients who were also impaired on FC measures showed larger overall treatment response than unemployed patients irrespective of their scores on FC measures.

**Disclosures**

VM, WZ & RX are full time employees of Takeda; PH has served as a consultant over the last 12 months to: Allergan, Akili, Boehringer-Ingelheim, Lundbeck, Otsuka Digital Health, Sanofi, Sunovion, and Takeda. He receives royalties from Neurocog Trials and has research grants from Takeda and the Stanley Medical Research Foundation.