Published in final edited form as:

Schizophr Res. 2012 May ; 137(1-3): 190–195. doi:10.1016/j.schres.2012.02.002.

Predictors of the Accuracy of Self Assessment of Everyday Functioning in People with Schizophrenia

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Abstract

Despite multiple lines of evidence suggesting that people with schizophrenia have substantial problems in self-reporting everyday functioning and cognitive performance, self-report methods are still widely used to assess functioning. This study attempted to identify predictors of accuracy in self report, both in terms of accurate self-assessment and over-estimation of current functioning. As part of the larger Validating Assessments of Everyday Real-World Outcomes (VALERO) study, 195 patients with schizophrenia were asked to self report their everyday functioning with the Specific Levels of Functioning (SLOF) scale, which includes subscales assessing social functioning, everyday activities, and vocational functioning. They were also assessed with measures of neuropsychological (NP) performance and functional capacity (FC), and were assessed for psychiatric symptomatology. In addition, a friend, relative or clinician informant was interviewed with the SLOF, and an interviewer with access to all information provided by the patient and informant (exclusive of performance-based data) generated “best estimate” ratings of actual, everyday functioning. Patients significantly ($p < .001$) overestimated their vocational functioning and everyday activities compared to the interviewer judgments. Lower levels of NP and FC performance and everyday functioning on the part of patients were consistently associated with overestimation of their functioning. Patient self-reports were not correlated with any performance-based measures, while interviewer judgments were significantly correlated with patients’ performance on NP and FC measures ($p < .005$). In regression analyses, adjusting for

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Contributions of the Authors.

Drs. Harvey, Heaton, and Patterson designed the overall study and obtained funding. Dr. Sabbag conceptualized and conducted the current analyses and wrote the first draft of the paper. Dr. Harvey provided scientific oversight throughout the project and edited the manuscript. Drs Heaton, Patterson, and Twamley and Ms Vella provided detailed comments to the paper across three drafts of the manuscript.

Conflict Of Interest Statement.

Dr. Harvey has received consulting fees from Abbott Labs, Boehringer Ingelheim, Genentech, Johnson and Johnson, Pharma Neuroboost, Roche Parma, Sunovion Pharma, and Takeda Pharma during the past year.

interviewer ratings of functioning, several predictors of the discrepancy between self and interviewer judgments emerged. Higher levels of depressive symptoms were associated with less overestimation in self-reports ($p < .001$). Delusions, suspiciousness, grandiosity and poor rapport were all significantly ($p < .001$) associated with over-estimation of functioning compared to interviewer judgments. Poorer NP and FC performance were also associated with over-estimation of everyday functioning, but these results were not statistically significant in multivariate regression models. Consistent with previous studies in schizophrenia, other neuropsychiatric conditions and non-clinical populations, higher levels of depression were associated with increased accuracy in self-assessment. Similarly, lower scores on performance-based measures and judgments of everyday functioning also predicted over-estimation of functioning. Thus, we identified bi-directional predictors of mis-estimation of everyday functioning, even when poor baseline scores were considered. These data suggest that it may be possible to screen patients for their ability to self-report their functioning, but that performance-based measures of functioning provide a less biased assessment.

Introduction

Multiple areas of everyday functioning are affected in patients with schizophrenia. These include deficits in social, vocational and residential domains, even during periods of remission from active psychosis (Leung et al., 2008). At least two-thirds of these patients are unable to reach milestones such as being in a stable relationship (Wiersma et al., 2000), having full time competitive employment (Harvey et al., 2009) or self-supported, independent living (Twamley et al., 2002). According to the World Health Organization, deficits in these areas combine to make schizophrenia one of the most disabling conditions for adults worldwide (Murray and Lopez, 1997).

Many different instruments are available for the assessment of real-world functioning, including rating scales that employ informant and self-reports (Leifker et al., 2011), direct observations by trained clinicians (Kleinman et al. 2009), and performance-based measures (Harvey et al., 2007). Studies have indicated that self-reports of everyday functioning in schizophrenia often do not converge with objective evidence or the reports of others (McKibbin et al., 2004; Patterson et al., 1997). This is not surprising, as one of the central characteristics of schizophrenia is reduced awareness of illness, referred to as lack of insight (Amador et al., 1994). While most studies of insight have focused on the awareness of the presence and origin of psychotic symptoms, studies have also shown that unawareness of cognitive (Medalia and Thysen, 2010) and functional deficits (Bowie et al., 2007) is common. In a recent study (Sabbag et al., 2011), we found that the clinician ratings of the severity of real-world impairment were more strongly correlated with objective data regarding outcomes, than impairment ratings generated by friends, relatives, other caregivers or the patients themselves.

Multiple studies have examined the accuracy of self-assessment in both clinical populations and in healthy individuals. For instance, healthy individuals tend to overestimate their abilities quite consistently, with poor performers having a particularly positive bias (Ehrlinger et al., 2008), although individuals with mild depressive symptoms tend to be more accurate in their self-assessments (Alloy and Abramson, 1977), with more severe depression associated with underestimation of functioning (Bowie et al., 2007). Providing deflating feedback to healthy people tends to increase the accuracy of their self-assessments, in line with the notion of “depressive realism” or the “sadder but wiser” phenomenon (Ehrlinger and Dunning, 2003). In studies of people with neurological/neuropsychiatric conditions, including schizophrenia (see above), multiple sclerosis (Carone et al., 2005), and traumatic brain injury (Spikman and van der Naalt, 2010), similar results have been found

and, across all of these domains, individuals with poorer neuropsychological (NP) test performance tend to underestimate their impairment.

The ongoing Validation of Everyday Real-World Outcomes (VALERO) study aims to validate self-report and informant-based assessments of real world functioning, completed by a sample of people with schizophrenia and their available informants (high-contact clinician, friend or relative). Following collection of that information, a best-estimate judgment was generated by the interviewer who saw the patients and informants. Patients were also examined with a modified version of the MATRICS Consensus Cognitive Battery (MCCB; Nuechterlein et al., 2008) and a performance-based assessment of functional capacity (FC), the UCSD Performance-based Skills Assessment, brief version (UPSA-B; Mausbach et al., 2007).

The overall results of the first phase of VALERO (Harvey et al., 2011) indicated that a comprehensive real-world functioning assessment, using self-report, informant report and interviewer best judgment across 6 different real-world functioning rating scales, demonstrated substantial overlap with performance-based ability measures. In addition, the results suggested that interviewer judgment ratings on one of the rating scales, the Specific Levels of Functioning (SLOF; Schneider and Struening, 1983) was most highly correlated with patients' scores across the performance-based NP and FC measures. Thus, the current set of analyses used the SLOF as our measure of everyday functioning and the other performance-based and clinical symptom measures to predict the accuracy of estimation of everyday functioning.

Building on our previous work (Sabbag et al., 2011), which determined the extent of discrepancy between self-assessments of everyday functioning and the judgments of various informants, we sought to evaluate whether patients' under- or over-estimation of functioning relative to interviewer judgments was systematically predictable. The predictors of discrepancy scores that we used were performance on the modified MCCB, performance on the UPSA-B and clinical symptoms, including depression, psychosis and negative symptoms.

First we examined the relationship of the clinical and performance-based variables and interviewer-based everyday functioning ratings on the SLOF in order to determine that the SLOF had been validly rated. Previous studies have shown that these performance-based measures consistently correlated with individual elements of everyday outcomes (Green et al., 2011; Leifker et al., 2011). Then, we calculated the correlations between these same predictors and the discrepancy between self reports and informant judgments of functioning across the three functional domains (interpersonal functioning, everyday activities and vocational functioning) measured by the SLOF. Based on previous findings, we expected that lower levels of performance on the NP and FC measures would be associated with overestimation of functioning, compared to the interviewer judgments, and that mild depression would be the sole factor correlated with accurate to underestimated ability, compared to interviewer judgments. In addition, we expected that lower levels of everyday functioning would relate to over-estimation of everyday functioning. For individuals with very low scores, it would be impossible for them to underestimate their functioning, so we performed statistical analyses to correct for this potential bias, entering everyday functioning first in blocked entry regression analyses, when examining the influences of other variables on the accuracy of self assessment.

Methods

Participants

These analyses are part of the larger VALERO study (phase 1), aimed at identifying the best methods for rating everyday functioning in people with schizophrenia. The study participants were patients (n=195) with schizophrenia or schizoaffective disorder who were receiving treatment at one of three different outpatient service delivery systems, two in Atlanta and one in San Diego. In addition, informants were interviewed concerning the everyday functioning of each of the patients, with these informants either being a high-contact clinician (case manager, psychiatrist, therapist or residential facility manager; 20% of cases) or a friend or relative (80% of cases). All of these research participants provided signed, informed consent, and this research study was approved by local IRBs in Atlanta and San Diego. In Atlanta, patients were either recruited at a psychiatric rehabilitation program (Skyland Trail) or from the general outpatient population of the Atlanta VA Medical Center. The San Diego patients were recruited from the UCSD Outpatient Psychiatric Services clinic, a large public mental health clinic, other local community clinics and by word of mouth.

All patients were administered a structured diagnostic interview, either the Structured Clinical Interview for the DSM (SCID; First et al., 1995, administered at the Atlanta sites) or the Mini International Neuropsychiatric Interview, 6th Edition (MINI; Sheehan et al., 1998, administered at the San Diego site) by a trained interviewer. All diagnoses were subjected to a consensus procedure at each local site. Patients were excluded for a history of traumatic brain injury with unconsciousness >10 minutes, brain disease such as seizure disorder or neurodegenerative condition, or the presence of another DSM-IV diagnosis that would exclude the diagnosis of schizophrenia. None of the patients were experiencing their first psychiatric admission. Comorbid substance use disorders were not an exclusion criterion, in order to capture a broad array of patients, but patients who appeared intoxicated were rescheduled. Inpatients were not recruited, but patients resided in a wide array of unsupported, supported, or supervised residential facilities. Informants were not screened for psychopathology or substance abuse.

Procedure

All patients were examined with an assessment of NP and FC performance. They also provided self-reports of interpersonal functioning, everyday activities, and vocational skills by completion of the SLOF. The examiner who conducted the interviews with the patient and informant then generated ratings, based on her impression of the “true” status of the patient. Clinical ratings of symptoms were collected with the Positive and Negative Syndrome Scale (PANSS, Kay, 1991) and are presented in Table 1, along with demographic information.

Performance-based assessment

Neurocognition—We examined NP performance with a modified version of the MATRICS consensus cognitive battery (MCCB). For this study, we did not include the social cognition measure from the MCCB, the Mayer–Salovey–Caruso Emotional Intelligence Test—Managing Emotions, because there are several reasons that social cognition measures may have a different relationship with everyday outcomes compared to neurocognitive measures. This minor modification of the MCCB makes the results similar to previous work, such as our own, that did not include social cognition measures (e.g., Bowie et al., 2008). We calculated a cognitive composite score, an average of 9 age-corrected T-scores based on the MCCB normative program.

Functional Capacity—We administered the brief version of the UCSD Performance-based Skills Assessment (UPSA-B) as our functional capacity measure. The UPSA-B is a measure of functional capacity in which patients are asked to perform everyday tasks related to communication and finances. During the *Communication* subtest, participants role-play exercises using an unplugged telephone (e.g., making an emergency call; dialing a number from memory; calling to reschedule a doctor's appointment). For the *Finance* subtest, participants count change, read a utility bill and write and record a check for the bill. The UPSA-B requires approximately 10 minutes, and raw scores are converted into a total score ranging from 0–100, with higher scores indicating better functional capacity.

Real-World Functional Outcomes—As we previously reported, the initial phase of the VALERO study indicated that everyday functioning rated with multiple rating scales was related to NP and FC performance. The best rating scale of those examined, on the basis of its optimal individual correlation with the ability measures, was the SLOF scale. This scale is a 43 item, self or informant rated report of a patient's behavior and functioning on the following domains: Interpersonal Relationships (e.g., initiating, accepting and maintaining social contacts, effectively communicating), Participation in Community and Household Activities (shopping, using the telephone, paying bills, use of leisure time, use of public transportation), and Work Skills (e.g., employable skills, level of supervision required to complete tasks, ability to stay on task, completes tasks, punctuality). Note that the Work Skills domain comprises behaviors important for vocational performance, but is not a rating of behavior during employment. The SLOF's Physical Functioning, Self-Care and Socially Acceptable Behavior subscales were not used in the VALERO study either because ceiling effects were expected, or because they did not assess everyday functioning. In order to examine discrepancies between interviewer judgments and patient self-reports, we subtracted the interviewer score from the patient score, such that higher scores reflected patients overestimating their functioning compared to interviewer judgments.

For 84 of the patients, their caregivers stated that they were unable to report on some elements of the SLOF Community Activities subscale. Rather than impute scores based on means or some other procedure, we conducted these analyses with the remaining 121 subjects. We acknowledge that this may have an impact on the results and as a result compared the scores on the other two SLOF subscales without missing data with t-tests. There were no differences in social functioning or vocational functioning between cases with and without missing data on the everyday functioning subscale (both $t:204$ df) <1.49 , both $p>.15$.

Psychopathology Measures

We assessed self-reported depressive symptoms with the Beck Depression Inventory-II (BDI-II; Beck et al., 1996), a 21-item questionnaire. Participants rated each of the 21 items on a scale from 0–4. A total depressive symptoms score was created by summing the 21 items (range 0 to 84).

Severity of psychotic and negative symptoms was assessed using the Positive and Negative Syndrome Scale (PANSS, Kay, 1991). This 30-item scale contains seven items measuring positive symptoms, seven items measuring negative symptoms, and sixteen items measuring general aspects of psychopathology and was completed after a structured interview by a trained interviewer. For the analyses in this paper, we used individual positive and negative symptoms, rather than total scores on these subscales. Our previous research on another sample (Leifker et al., 2009) indicated that overall subscale scores were less informative than individual item scores in terms of correlations with everyday functioning measured with the SLOF.

Results

Table 1 presents scores for the three subscales on the SLOF, for both self-reports and interviewer judgments and for all of the predictor variables, including the UPSA-B, modified MCCB, BDI-II, the PANSS items and demographic variables. As can be seen in the table, the patients consistently reported better functioning on average across domains compared to the interviewer judgment, and these differences were significant for two of the three subscales. Despite these differences, 40% of the patients had a total score identical to their interviewer's score. Of the individuals whose score was not identical, 2/3 of patients reported less impairment (overestimating their functioning) compared to their interviewers.

Next, we computed Pearson correlations between the predictor variables and the SLOF scores as rated by the interviewer. As can be seen in Table 2, there were a number of significant zero-order correlations between the predictor variables and domains of everyday functioning as rated by the interviewer on the SLOF. Both performance-based measures (MCCB and UPSA-B) were correlated with all three domains of everyday functioning in the zero-order analysis. Interestingly, one of the strongest predictors of impairments in functioning was depression, which exerted a negative influence on all three individual functional domains and the total score.

We then used a simultaneous multivariate regression to quantify the overall relationship between the predictors and all three domains and the total scores for baseline functioning on the SLOF. These regressions, also presented in Table 2, indicated that all the relationships between the sets of predictor variables and indices of everyday functioning were statistically significant. The variance accounted for the set of predictors ranged from a low of 19% for vocational functioning to a high of 38% for social functioning. These data compare favorably to previous results from our studies and other research quantifying the prediction of everyday outcomes from clinical and performance-based measures, indicating that interviewer judgments of everyday functioning were related to the clinical and performance-based predictors.

Table 3 presents the correlations between predictor variables and the discrepancy between the interviewer ratings and patient self-reports for the everyday functioning variables. As can be seen in the table, there were a number of variables that were significantly associated with the discrepancy between self-reported functioning and interviewer judgments. Every statistically significant correlation between performance-based variables and self-reported functioning found that poorer performance suggested over-estimation. In the same way, every statistically significant correlation with a PANSS symptom item found that greater symptom severity was correlated with over-estimation of functioning. However, none of the clinical and ability variables was correlated with the discrepancy between self reports and interviewer judgments on the community activities subscale.

In the final analyses, we used blocked entry regression analyses to examine whether the correlations between the discrepancy between self reports and interviewer judgments of functioning were simply an artifact of patients' low functioning leading to obligatory overestimation. As we expected that low levels of ability would predict over-estimation, we entered the interviewer judgments of functioning for each domain as the first block in the regression analysis. For the second block, we entered all 14 PANNS items, the MCCB, the UPSA-B, and age, education and mother's education variables in a simultaneous entry procedure.

As shown in Table 4, other than for community activities, poorer everyday functioning as rated by the interviewer was correlated with patients overestimating their functioning. In addition, increased levels of self-reported depression were associated with tendencies to

have more accurate estimation of everyday functioning compared to the interviewer judgment. For all of the variables where interview judgment of performance was a significant predictor of discrepancy scores, there were other significant individual symptomatic correlates of overestimation of functioning that were found in the second block of the regression analysis. These included both psychotic symptoms (hallucinations, suspiciousness), negative symptoms (poor rapport) and grandiosity. Interestingly, none of the performance-based measures correlated with discrepancy scores beyond the influence of interviewer-rated functional scores entered in the first block of the analysis, likely because of their correlation with the interviewer judgments.

We previously reported on the consistent lack of correlation between self-reported everyday functioning on the SLOF and NP and FC performance (Sabbag et al., 2011). In that paper we did not consider depression. In the current sample, the correlation between self-reported functioning and self-reported depression was quite substantial, with the correlations between self reported depression and SLOF total scores, interpersonal, vocational and everyday living skills ranging from a low of $r = -.31$ ($p < .001$) for work skills to a high of $r = -.51$ ($P < .001$) for the total score. Thus, higher levels of self-reported depression were associated with greater self-reported disability. Thus, both self-reported and interviewer rated disability is correlated with self-reported depression, while in this same sample self-reported disability was unassociated with NP and FC performance.

Discussion

In our study we found that people with schizophrenia, on average, overestimate their functional ability, despite the fact that 40% of patients gave a report of their functioning that was close to what the interviewer decided. This is consistent with previous work demonstrating that over half of patients have impaired insight (Dickerson et al., 1997, Gharabawi et al., 2006). We go beyond previous findings relating everyday functioning with performance-based and clinical measures by identifying systematic relationships that correlate with both over and underestimation of everyday functioning in the same sample of patients. Finding that we can identify variables that correlate with both over and underestimation argues against the idea that these correlations are a random finding or simply due to the fact that low performers have more room for over-estimation than underestimation of their functioning. The amount of variance in mis-estimation of functioning that was accounted for by our predictor models was substantial (20–40% for significant analyses), which is important because mis-estimations are intrinsically a difference score, which would be expected to include elements of random variation as well as response biases. Thus, the likely relationship between discrepancies among self-reported and interviewer rated everyday functioning and the other predictor variables may be even greater.

The primary limitation of this study is that the interviewer judgments were based on patient self reports and the input of a single informant. Multiple informants representing different perspectives are being included in VALERO phase II. Our participants had moderate levels of symptoms, including depression, positive and negative symptoms, which may suggest that more symptomatic patients might have even greater deficits in self-assessment of functioning, and that depression might have even stronger deleterious effects on functioning in more symptomatic patients.

Depression had a unique relationship with everyday functioning in this study as it has had in previous research on depression and schizophrenia. Depression severity correlated with poorer everyday functioning (as rated by the interviewer) on one hand and less overestimation of functioning by the patients on the other. Depression was the largest

correlate of impairment in everyday functioning, going beyond the functional capacity measures in terms of predictive power for indexing everyday functioning. Thus, depression correlated with poorer everyday functioning, but did not have a global adverse impact on all cognitive functions, because more depression was associated with increased awareness of the current levels of impairment in functioning. Self-assessment is a meta-cognitive ability that may be divergent from NP performance, but is a cognitive ability nonetheless. These findings suggest that additional research on the specific mechanisms of depressive realism is important.

Further, the unique situation where depression has both adverse impacts on functioning and positive correlations with self-assessment abilities itself requires further attention. For example, in bipolar disorder depression, cyclical and serial changes in mood symptom severity may have differential implications for the relationship between everyday functioning and self-assessment of functioning. Prior studies have shown that in geriatric chronically institutionalized schizophrenia patients, only those with better cognitive functioning tend to manifest any substantial symptoms of depression (Chemerinski et al., 2008). Similarly, D'Antonio and Serper (2012) found that depression was associated with better cognitive functioning, but was unassociated with everyday functioning ratings in a sample of geriatric hospitalized patients. The relationship between insight into illness and depression seems complex. Some studies suggest that greater depression is associated with better insight (Buchy et al., 2009) and some have indicated that the opposite is true: greater depression is associated with worse insight (Parellada et al., 2011). The correlations between insight into cognitive deficits and clinical symptoms are not completely understood, but two studies with different rating methods reported no correlation (Greenberger and Serper, 2010; Medalia and Thiesen, 2008). Medalia and Thysen (2010) reported higher prevalence levels of unawareness of cognitive deficits than unawareness of clinical symptoms.

Even though we were successful in predicting mis-estimation of social and work-related functioning, we were not able to identify the substantive correlates of mis-estimation of community living skills. Our inability to predict discrepancy in community living skills ratings is in contrast to these same predictor variables quite efficiently relating to interviewer judgment scores of these same skills. This argues against a “reduced statistical power” explanation due to the smaller sample. We did not test the differential correlations between community living skills and other variables, because there were too many variables and the correlations were not large enough to support these comparative analyses.

These results have implications for future research studies and for clinical interventions. 60% of patients provided self reports that diverged from interviewer judgments in both over and underestimated directions. Using these self-reported scores as outcome measures in treatment studies remains problematic. Assessment of cognitive insight might be a partial solution, but performance-based measures of functioning should remain the gold-standard of functional assessment in short term treatment studies. Treatment of depression appears to have the potential to improve everyday functioning in a manner independent from neuropsychological and functional capacity, as the relationship between depression reported by the patients and real-world functioning rated by interviewers seemed considerable. Finally, higher levels of certain psychotic and negative symptoms appear likely to lead to overestimation of functioning, suggesting that even in patients who on average manifest clinical stability, self-assessment of everyday functioning seems affected. Most of the clinical variables studied did not relate to discrepant self reports, suggesting that future research will be required in order to definitively identify the clinical characteristics associated with lack of insight into functional deficits in schizophrenia.

Acknowledgments

All individuals who contributed to this paper are listed as authors. No professional medical writer was involved in any portion of the preparation of the manuscripts. Data were collected by paid research assistants who did not contribute to the scientific work in this paper.

Role of Funding Source.

This research was funded by the National Institute of Mental Health, who provided no input into the analyses and presentation of these data.

This research was supported by Grants MH078775 to Dr. Harvey and MH078737 to Dr. Patterson from the National Institute of Mental Health.

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Table 1

Scores on SLOF subscales and Predictor Variables (n=195)

	M	SD	Possible Range						
UPSA-B	76.66	13.14	0–100						
Modified MCCB	37.90	6.94	10–140						
BDI-II	15.80	12.03	0–84						
(p1) Delusions	2.72	1.58	All PANSS items have a range of 1–7						
(p2) Conceptual Disorganization	2.35	1.40							
(p3) Hallucinations	2.97	1.67							
(p4) Excitement	1.58	0.96							
(p5) Grandiosity	1.85	1.30							
(p6) Suspiciousness	3.01	1.40							
(p7) Hostility	1.50	0.89							
(n1) Blunted Affect	2.31	1.44							
(n2) Emotional Withdrawal	2.23	1.24							
(n3) Poor Rapport	1.75	1.15							
(n4) Passive-apathetic social withdrawal	2.72	1.46							
(n5) Difficulty in Abstraction	3.07	1.27							
(n6) Lack of Spontaneity	2.01	1.28							
(n7) Stereotyped thinking	1.75	1.08							
Age	44.03	11.73							
Patient Education	12.97	2.52							
Mother's Education	12.85	3.74							
Race/Ethnicity	%								
Caucasian	54								
African American	38								
Latino	8								
	Interviewer		Self-Report						
	N	M	SD	M	SD	t	p		
Interpersonal Relations	195	24.83	5.81	25.62	6.09	1.43	.17		
Vocational Functioning	195	21.82	5.46	24.41	5.89	6.48	.001		

	M	SD	Possible Range		
Community Activities	121	48.78	7.20	51.16	5.36
					5.29
					.001

Note. Higher scores reflect better functioning

Table 2

Correlations between Ability and Clinical Variables and Interviewer Rated SLOF Scores

	Total (n=195)	Interpersonal N=195)	Vocational (n=195)	Community Activities (n=121)
UPSA-B	.36 ***	.24 ***	.21 **	.32 ***
Modified MCCB	.32 ***	.24 ***	.19 **	.23 **
BDI-II	-.44 ***	-.44 ***	-.33 ***	-.31 ***
(p1) Delusions	-.21 **	-.03	-.04	-.09
(p2) Conceptual Disorganization	-.12	-.02	-.03	-.02
(p3) Hallucinations	-.26 ***	-.12	-.05	-.08
(p4) Excitement	-.08	-.02	-.02	-.09
(p5) Grandiosity	-.04	-.08	-.15 *	-.19 *
(p6) Suspiciousness	-.36 ***	-.09	-.27 *	-.19 *
(p7) Hostility	-.19 **	-.19 **	-.09	-.00
(n1) Blunted Affect	-.00	-.19 **	-.03	-.09
(n2) Emotional Withdrawal	-.13	-.28 *	-.05	-.08
(n3) Poor Rapport	-.14 *	-.16 *	-.01	-.10
(n4) Passive-apathetic social withdrawal	-.34 ***	-.40 ***	-.10	-.05
(n5) Difficulty in Abstraction	-.19 **	-.11	-.02	-.15
(n6) Lack of Spontaneity	.00	-.08	-.03	-.14
(n7) Stereotyped thinking	-.19 **	-.09	-.08	-.02

Note.

*
p<.05;**
p<.01;***
p<.001 Positive correlations predict better functioning

Regression analyses

SLOF Total: F(17,177)=4.43, p<.001, R² =.34SLOF Interpersonal F(17,177)=6.42, p<.001, R² =.38SLOF Vocational F(17,177)=2.61, p<.005, R² =.19SLOF Activities F(17,103)=2.84, p<.005, R² =.21

Table 3
Correlations between Ability and Clinical Variables and Discrepancies between Self-Reported and Interviewer Rated SLOF Scores

	Discrepancy Scores		
	Total (n=195)	Interpersonal (N=195)	Vocational (n=195)
UPSA-B	-.12	-.11	-.21**
Modified MCCB	-.17*	-.12	-.21**
BDI-II	-.09	-.02	-.16*
(p1) Delusions	.15*	.13	.15*
(p2) Conceptual Disorganization	.16	.12	.18**
(p3) Hallucinations	.06	.09	.13
(p4) Excitement	-.03	.13	.01
(p5) Grandiosity	.04	.18**	.13
(p6) Suspiciousness	-.06	.05	.14*
(p7) Hostility	-.09	.04	-.08
(n1) Blunted Affect	.06	.02	.04
(n2) Emotional Withdrawal	-.09	-.03	-.04
(n3) Poor Rapport	-.10	-.02	-.01
(n4) Passive-apathetic social withdrawal	.11	.17*	.03
(n5) Difficulty in Abstractions	.10	.08	.13
(n6) Lack of Spontaneity	-.04	.05	.04
(n7) Stereotyped thinking	.13	.19**	-.03

Note.

* p<.05;

** p<.01;

** p<.001

For symptoms, positive correlations are associated with overestimation of functioning, for the performancebased measures negative correlations reflect overestimation.

Table 4

Regression Results Predicting the Discrepancy between Self Reported Functioning and Interviewer Judgments: Forced Entry Analysis Entering Interviewer Scores First

Discrepancy Scores by SLOF Domain	Block	Variable(s)	P	R ² Change	R ² Total
Total	1	SLOF Total-	.001	.24	.24
	2	Depression-Suspiciousness+ Poor Rapport+	.001	.17	.41
Interpersonal	1	Interpersonal-	.001	.15	.15
	2	Depression-Grandiosity+	.001	.05	.20
Work	1	Work-	.001	.15	.15
	2	Depression-Hallucinations+	.001	.17	.32
Community	1	n/a	.73	.01	.01
	2	n/a	.58	.01	.02

Note: – means that higher scores were associated with less overestimation of self functioning by self report and + means that higher scores correlate with more overestimation