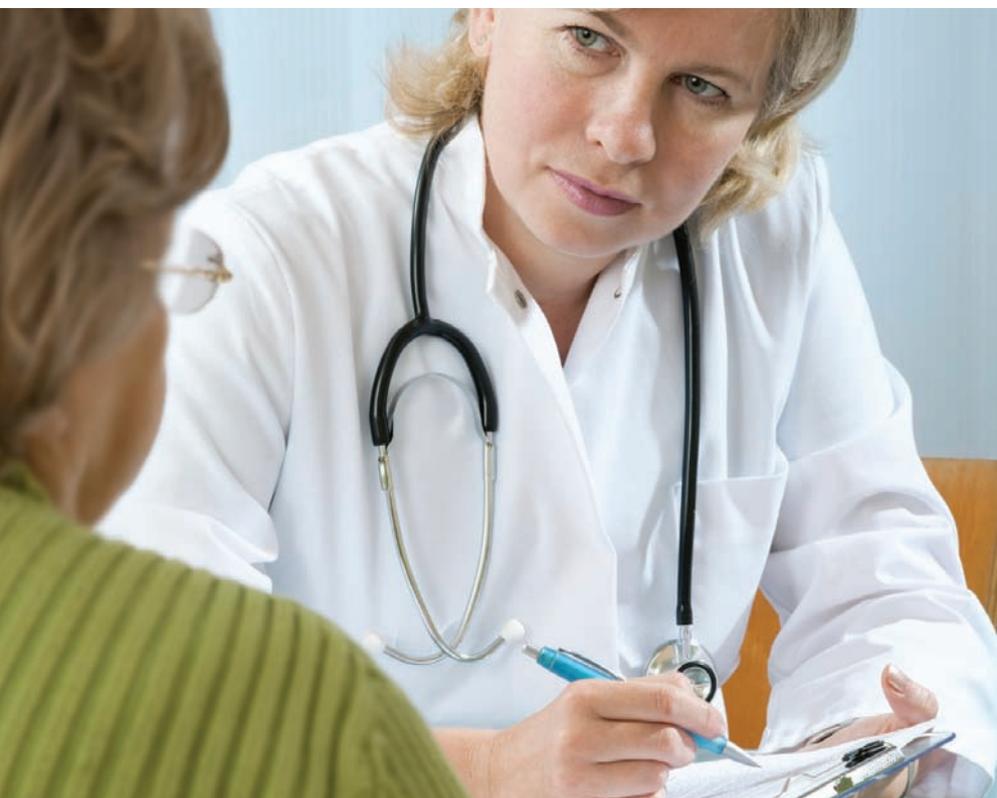


Update on Cognition



increased accuracy of self-assessment. High-contact clinicians may provide reports of functioning that are more convergent with patients' ability as measured by performance-based assessments. Clinicians who are assessing deficits in cognition and everyday functioning may need to carefully consider the source of the information obtained before making treatment and placement decisions.

KEY WORDS

Schizophrenia, neuropsychology, disability

INTRODUCTION

It has long been known that people with schizophrenia have problems in the self assessment of the severity of their illness symptoms. Referred to as lack of insight, unawareness of the presence and origins of psychotic symptoms is possibly the most prevalent symptom of the illness.¹ As we have discussed in this column before, impairments in everyday functioning are also extremely common, extending to all domains of outcome, including social, vocational, and everyday living.² These impairments include failures to achieve typical milestones, such as employment, independent residence, and social success (e.g., marriage or equivalently stable relationships). Further, deficits in the basic skills underlying achievement are also typically found, with patients manifesting impairments in social, vocational, and everyday living skills measured with performance-based assessments.

It would seem a straightforward matter to assess everyday functioning. Asking people how much they are working, where they live and who is responsible, and what their social status is seems a logical way to collect information.

ASSESSMENT OF EVERYDAY FUNCTIONING IN SCHIZOPHRENIA

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ABSTRACT

Patients with schizophrenia manifest substantial cognitive and functional impairments. Assessment of these impairments is complicated by impairments in the accuracy of self-assessment of functioning on the part of both people with schizophrenia and certain classes of informants. Many of these reports

correlate close to zero with performance measured objectively by performance-based tests. Much like the phenomenon of lack of insight, unawareness of functional impairments is predicted by cognitive impairments. In addition, like other neuropsychiatric conditions and healthy individuals, mild depression is associated with

Interestingly, people with schizophrenia seem to provide reports of their everyday functioning that are markedly divergent from both the reports of people who know them well and from the objectively measured performance on tests of their functional abilities.³ These discrepancies appear to be found across all three domains of functional outcomes, with performance in all of these domains of functioning being reported by patients in a manner inconsistent with other information.⁴

INVESTIGATING ALTERNATIVE SOURCES OF PATIENT ASSESSMENT ON COGNITIVE FUNCTIONING

Cognitive functioning is a domain where unawareness of impairment is prevalent. Recently, Medalia et al^{5,6} developed rating scales to compare patient and clinician ratings of awareness of cognitive impairment. Studying patients with objectively measured cognitive deficits, she has shown that patients have substantial limitations in their ability to self-assess their cognitive performance,⁵ while clinician informants give ratings of impairments that are more congruent with patients' performance.⁶ This congruence is found in the absence of any knowledge on the part of the clinicians of the level of objective performance produced by the patients.

In line with this finding, if it is impossible to expect people with schizophrenia to accurately report their everyday functioning, it might seem that asking someone who knows them well to report their functioning might be a suitable alternative. In standard clinical settings, many patients are in contact with relatives (parents or siblings) or, if they do not reside independently, many have

roommates or acquaintances who might be able to report. Those who receive case management services also have clinicians or trainers who meet with them and other patients regularly who live in structured living arrangements. While some data have suggested that many patients with schizophrenia are unable to identify potential informants,⁷ we have recently completed two large scale studies (N>300) where patients identified one or more potential informants who were then successfully contacted and reported on the patients' behavior.^{8,9}

The results of these studies have suggested some promise for the use of informants to generate useful information about cognitive and everyday functioning in people with schizophrenia. Both studies used similar methods. Interviewers conducted structured interviews with patients with schizophrenia and informants who were friends, relatives, or high-contact clinicians. The interviewers then generated their own "best estimate" ratings of the actual levels of functioning. In one study, the focus was cognition and the other focused on everyday functioning rated with several different rating scales. In the first study, these interviewer judgments of cognitive functioning were found to be more sensitive to the benefits of atypical antipsychotic treatment than performance-based assessments. In the second, interviewer judgments of everyday functioning manifested a substantial relationship with performance on measures of cognition and the functional capacity. In fact, when all six rating scales were included simultaneously as an index of functioning, there was 41-percent shared variance.

This level of overlap compares very favorably to recent studies

looking at the correlation between identical measures of ability and patient self reports of functioning. For instance, in the Measurement and Treatment Research to Improve Cognition in Schizophrenia Co-primary and Translation (MATRICS-CT) study, described previously in this column,¹⁰ the correlation between performance on functional capacity measures and self-reported everyday functioning and the correlation between self-reported cognitive functioning and performance on a neuropsychological assessment each accounted for five-percent shared variance. Thus, the lack of congruence between self reports of functioning and cognition and performance-based measures is quite similar across the two domains.

So, the next question that arises is whether informant reports are equivalently accurate. If the report obtained from anyone who knows the patient well is similar and more related to objective information than the patient's own self-assessment, then recruiting someone who knows the patient to tell you the patient's current functioning should not be a major challenge. It seems, however, that there could be limitations on the part of certain informants. For example, clinicians who see their patients rarely and in limited contexts might not generate accurate reports. Relatives are themselves at risk for experiencing psychiatric conditions that might affect their evaluation ability, and as many as a third may have some diagnosable conditions. Friends might experience either psychiatric conditions or substance abuse disorders, which might compromise their rating ability.

Direct comparisons of the validity of different informant reports are rare. We have done one such study,¹¹ and the results strongly favor the use

of clinician reports. In a sample of 195 patients with schizophrenia, either a clinician, friend, or relative provided reports of functioning on six different functional status rating scales, and patients performed two different ability measures: the MATRICS Consensus Cognitive Battery (MCCB) and the University of California San Diego (UCSD) Performance-based Skills Assessment-Brief Version (UPSA-B). Patients provided self reports of their functioning that were uncorrelated with both performance-based measures of ability. Friend or relative informants also provided ratings that were not statistically significant across 12 correlations (6 rating scales and 2 performance-based measures). In contrast, high-contact clinicians generated ratings that were significantly correlated with UPSA-B scores for four of the six rating scales and with the MCCB for two of the six. In addition, because the samples of high-contact clinicians were smaller than the friend or relative informant samples, the nonsignificant correlations between informant reports and MCCB scores were substantially larger than those seen for friend or relative informants. Thus, high-contact clinicians were found to generate reports of functioning that were correlated with ability measures, even though they were unaware of those scores.

ACCURACY OF SELF-REPORTED FUNCTIONAL ASSESSMENTS

It is important to keep in mind that biased self-reports of everyday functioning are not a symptom of psychosis. Healthy people have a consistently detected optimistic bias in terms of their self-evaluations.¹² However, a systematic positive bias may be generated by different factors than reports of functioning that are completely uncorrelated

with objective evidence. In the generally healthy population, mild depression is associated with greater accuracy in subjective self-assessment than that seen in euthymic healthy people. In addition, deflating feedback increases the accuracy of subsequent self-assessment, leading to accurate self-assessment and not leading to exaggerated self-denigration. This same “sadder but wiser” phenomenon has been found in people with schizophrenia as well,⁴ where mild depression was associated with greater self-assessment accuracy than no depression and where more substantial depression was associated with under-estimates of functioning.

Another predictor of poor self-assessment is greater impairment in cognitive functioning.⁴ Patients with poorer performance-based ability scores and who are rated by clinicians as more impaired are more likely than less impaired patients to over-estimate their ability. This has the potential to be a trivial finding, because if one's score is 5 on a 100-point scale, a random self-assessment error will almost always lead to over estimation. Lending some credence to these findings as valid are the results of studies of people with other neuropsychiatric conditions. For instance, in people with multiple sclerosis (MS), those with depression are more accurate self-assessors than those with disinhibition and poorer performance on cognitive assessments predicts over-estimation of performance.¹³ Because MS patients perform so much better than schizophrenia patients on cognitive tests, the over-estimation bias due to floor effects is not as extreme and provides some additional validation information to the idea that poor cognitive or

TAKE HOME POINTS

- Self assessment of cognitive impairment and functional deficits in schizophrenia seems problematic.
- Clinician informants appear to generate reports of functioning that are more congruent with objectively measured abilities than friends, relatives, or the patients themselves.
- There may be systematic influences on the accuracy of self reports: Mild depression may increase accuracy and poorer cognitive, and functional ability may lead to overestimation.

functional abilities are likely to be correlated with impaired self assessment.

An additional possible contributor to impaired self-assessment, particularly of cognitively relevant functional abilities, is impairment in metacognitive ability. Metacognition refers to the abilities we have just been discussing, self-assessment and self-evaluation. Several theories of the origins of positive symptoms have been based on this construct, suggesting that problems in identifying the origin of information in immediate memory may contribute to symptoms such as hallucinations, delusions, or

communication impairments. Studies have suggested that people with schizophrenia make several metacognitive errors,¹³ including poor ongoing assessment of their cognitive performance and failing to implement self assessments to guide their ongoing decision making. Treatment of metacognitive deficits has been proposed as a strategy to improve awareness of illness, including cognitive and functional deficits, as well as a means to improve decision making in the illness.

CONCLUSION

Taking self report at face value in people with schizophrenia may lead to inaccurate assessments. Taking careful stock of all sources of information is required to fully understand functioning, and the problems in unawareness of illness seen in terms of psychotic symptoms also apply to functional abilities and outcomes as well.

REFERENCES

1. Amador XF, Flaum M, Andreasen NC, et al. Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Arch Gen Psychiatry*. 1994;51:826–836.

2. Harvey PD. Direct measurement of disability. *Psychiatry* (Edgmont). 2009;6(10):43–46.

3. McKibbin C, Patterson TL, Jeste DV. Assessing disability in older patients with schizophrenia: results from the WHODAS-II. *J Nerv Ment Dis*. 2004;192:405–413.

4. Bowie CR, Twamley EW, Anderson H, et al. Self-assessment of functional status in schizophrenia. *J Psychiatr Res*. 2007;41:1012–1018.

5. Medalia A, Thysen J. Insight into neurocognitive dysfunction in schizophrenia. *Schizophr Bull*. 2008;34:1221–1230.

6. Medalia A, Thysen JA. Comparison of insight into clinical symptoms versus insight into neurocognitive symptoms in schizophrenia. *Schizophr Res*. 2010;118:134–139.

7. Patterson TL, Semple SJ, Shaw WS, et al. Researching the caregiver: family members who care for older psychotic patients. *Psychiatr Ann*. 1996;26:772–784.

8. Harvey PD, Ogasa M, Cucchiari J, et al. Performance and interview-based assessments of cognitive change in a randomized, double-blind comparison of lurasidone vs. ziprasidone. *Schizophr Res*. 2011;127:188–194.

9. Harvey PD, Raykov T, Twamley EM, et al. Validating the measurement of real-world functional outcome: phase I results of the VALERO study. *Am J Psychiatry*. In press.

10. Green MF, Schooler NR, Kern RD, et al. Evaluation of functionally-meaningful measures for clinical trials of cognition enhancement in schizophrenia. *Am J Psychiatry*. 2011;168:400–407.

11. Sabbag S, Twamley EM, Vella L, et al. Assessing everyday functioning in schizophrenia: not all informants seem equally informative. *Schizophr Res*. In press.

12. Dunning D, Story AL. Depression, realism, and the overconfidence effect: Are the sadder wiser when predicting future actions and events? *J Person Soc Psychol*. 1991;61:521–532.

13. Carone DA, Benedict RH, Munschauer FE 3rd, Fishman I, Weinstock-Guttman B. Interpreting patient/informant discrepancies of reported cognitive symptoms in MS. *J Int Neuropsychological Soc*. 2005;11:574–583.

14. Koren D, Seidman LJ, Poyurovsky M. The neuropsychological basis of insight in first-episode schizophrenia: a pilot

metacognitive study. *Schizophr Res*. 2004;70(2–3):195–202.

15. Koren D, Seidman LJ, Goldsmith M, Harvey PD. Real-world cognitive—and metacognitive—dysfunction in schizophrenia: a new approach for measuring (and remediating) more “right stuff.” *Schizophr Bull*. 2006;32:310–326.

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