Bootstrap Resampling

Bootstrap resampling with replacement was used to internally validate the predictors in the final model (1, 2). Bootstrapping involved randomly sampling the data with replacement (B=10,000 bootstrap samples) for the predictors in the final model and repeating the Cox regression analyses to assess the accuracy of the confidence intervals.

The bootstrap corrected 95% confidence intervals (95% CI) for each of the significant predictors in the final model did not overlap with 0 (Disorganized Communication>2, 95% CI 0.109-2.574, P=0.007; Suspiciousness=5, 95% CI 0.111-2.538, P=0.005; Verbal Memory <2 SD, 95% CI 0.920-3.391, P<0.001; Decline in Social Functioning 95% CI 0.246-0.815, P<.001; Age 95% CI 0.045-0.444, P=.03), suggesting that the final predictor model was not overfit to the data.

References

1.   Efron B, Tibshirani RJ: An Introduction to the Bootstrap. CRC press, 1994

2.   Sauerbrei W, Schumacher M. A bootstrap resampling procedure for model building: application to the Cox regression model. Stat Med 1992; 11:2093–2109

TABLE S1. Neurocognitive domains, Individual tests, and Dependent measures

Verbal Memory (α = .82, 4 tests)	
California Verbal Learning Test (CVLT)	
Total for trials 1–5	Words recalled in trials 1-5
Long delay free recall	Recognition errors
Wechsler Memory Scale, Revised (WMS-R)	
Logical Memory: Immediate and Delayed	Story elements recalled
Working Memory (α = .78, 3 tests)	
Wechsler Intelligence Scale for Children-III/Wechsler Adult Intelligence Scale-R (WISC-III/WAIS-R)	
Digit Span Forward and Backward	Digit sequences recalled
Letter-Number Span	Number of correct trials
Executive Function (α = .78, 5 tests)	
Ruff Figural Fluency Test	Number of correctly reproduced figures
Wisconsin Card Sorting Test (WSCT), Version 2	
Perseverative Errors	Percentage of perseverative errors;
Categories Completed	Number of correctly completed categories
Conceptual Level Responses	Number of consecutive correct responses in $\geq$ 3 runs
Controlled Oral Word Association Test (COWAT)	Words produced in 1 minute
Sustained Attention (α = .84, 3 tests)	
Continuous Performance Test-Identical Pairs (CPT-IP)	
2-, 3-, and 4-digits	d' (for all stimulus sets)
Processing Speed (α = .81, 4 tests)	
Trails Making Test, Part A and B	Time to complete trails
WISC-III/WAIS-R Digit Symbol Coding	Symbols accurately coded in 2 minutes
Symbol cancellation test	Time to compete cancellation
Motor Speed (α = .75, 4 tests)	
Finger Tapping Test, Dominant and Nondominant hand scores	Taps in 10 seconds, over 5 blocks
Grooved Pegboard Test, Dominant and Nondominant hand scores	Time to place pegs
Visuo-Spatial Processing (α = .63, 2 tests)	
Judgment of Line Orientation	Lines accurately matched
WAIS-R/WISC-III Block Design	Correctly reconstruct blocks to match patterns on cards
Language (α = .82, 3 tests)	
Wide Range Achievement Test-III (WRAT-III) Reading	Total score for words read correctly
Boston Naming Test	Number of correctly named items
WAIS-R/WISC-III Vocabulary	Number of words orally defined

TABLE S2. Potential Predictor Domains and Individual Variables for the Multivariable Logistic Regression Models

Domain	Variables
Demographics	Age at baseline Level of education Parental socio-economic status (SES) Gender Handedness Race Ethnicity First-degree relative with Psychosis
Intellectual Functioning	Estimated Current IQ
Neurocognitive Performance	Processing speed Verbal memory Executive function Working memory Visuo-spatial processing Motor speed Sustained attention Language
Positive Symptoms, SOPS	5 Symptoms: 1. Unusual Thought Content 2. Suspiciousness 3. Grandiosity 4. Perceptual Abnormalities 5. Disorganized Communication Absolute number of symptoms greater than 2, level 3, and level 4 Total Positive Score (raw score; cutoff > 15)
Negative Symptoms, SOPS	4 Symptoms: 1. Social Isolation 2. Avolition 3. Expression of Emotion 4. Experience of Emotion and Self 5. Ideational Richness 6. Occupational Functioning Absolute number of symptoms greater than 2, level 3, and level 4 Total Negative Score (raw score; cutoff > 13)

Continued

Disorganized Symptoms, SOPS	4 Symptoms:
	   1. Odd Behavior or Apperance
	   2. Bizarre Thinking
	   3. Trouble with Focus and Attention
	   4. Hygiene Social Attentiveness
	Absolute number of symptoms greater than 2, level 3, and level 4
	Total Disorganized Score (raw score; cutoff > 4)

General Symptoms, SOPS	4 Symptoms:
	   1. Sleep Disturbances
	   2. Dysphoric Mood
	   3. Motor Disturbances
	   4. Impaired Tolerance to Normal Stress
	Absolute number of symptoms greater than 2, level 3, and level 4
	Total General Score (raw score; cutoff > 6)

Total score, SOPS	Raw score; cutoff > 41 Absolute number of symptoms greater than 2, level 3, and level 4
Social and Role Functioning	Baseline GF: Social Baseline GF: Role GF: Social or Role deterioration of 10% GF: Social or Role deterioration of 30% Global Assessment of Functioning (GAF)
Diagnostic Comorbidity: Axis 1	DSM-IV diagnoses: Any mood disorder Any anxiety disorder Any mood or anxiety Any substance abuse disorder Major depressive disorder Generalized anxiety Agoraphobia Obsessive-compulsive disorder Panic Social phobia Cannabis Alcohol Nicotine
Diagnostic Comorbidity: Axis 2	DSM-IV diagnoses: Paranoid Schizoid Schizotypal