Supplementary Online Content

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eAppendix 1. Methods

eAppendix 2. Results of Control Analyses

eTable 1. Sociodemographic and Clinical Characteristics of the Study Population at Baseline (N=618)

eTable 2. Within-Subject Comparisons of Follow-up Versus Baseline Characteristics

eTable 3. Initial Structural Equation Model (SEM)

eTable 4. Direct and Indirect Effects of Baseline Variables on the Three Real-Life Functioning Domains at t0 (Within t0 Effects) Estimated in the Final Structural Equation Model

eTable 5. Split Sample Cross-Validation of the Final Structural Equation Model (SEM): Standardized Coefficients of the Effects of Baseline Variables on the Three Real-Life Functioning Domains at Follow-up in the Training and Test Samples

eTable 6. Control Analysis for the Site Effect

eTable 7. Multiple Linear Regression of Work Skills at Follow-up on Variables Used in the Structural Equation Model and Physical and Psychiatric Comorbidities

eTable 8. Multiple Linear Regression of Everyday Life Skills at Follow-up on Variables Used in the Structural Equation Model and Physical and Psychiatric Comorbidities

eTable 9. Multiple Linear Regression of Interpersonal Relationships at Follow-up on Variables Used in the Structural Equation Model and Physical and Psychiatric Comorbidities

eTable 10. Initial Latent Change Score Model

eReferences.

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix 1. Methods

Exclusion criteria

The exclusion criteria were: a) a history of head trauma with loss of consciousness in the 4 years between baseline and follow-up assessments; b) progressive cognitive deterioration possibly due to dementia or other neurological illness diagnosed in the last 4 years; c) a history of alcohol and/or substance abuse in the last 6 months; d) current pregnancy or lactation; e) inability to provide an informed consent, and f) treatment modifications and/or hospitalization due to symptom exacerbation in the last 3 months.

Study assessment procedures

All subjects and their caregivers were both interviewed and tested, and no data were reconstructed only from clinical records, which were consulted as a further source of information on hospitalizations or changes in pharmacological therapy from baseline to follow-up.

Enrolled patients completed the assessments in three days, following the same schedule used in the cross-sectional investigation[1]: 1) collection of socio-demographic information; psychopathological and neurological assessments on the first day; 2) neurocognitive, social cognition and functional capacity assessments on the second day; 3) assessment of personal resources and perceived stigma on the third day in the morning, or in the afternoon of any of the days, according to the patient's preference.

For real-life functioning assessment, the patient's key caregiver, preferably the same interviewed in the cross-sectional investigation, was invited to join one of the scheduled sessions.

Evaluation of illness-related factors

A clinical form was filled in with information on disease course and treatments in the previous 4 years, using all available sources (patients, relatives, medical records and mental health workers).

The Positive and Negative Syndrome Scale (PANSS)[2] was used to rate the dimensions "disorganization" and "positive symptoms", in agreement to the consensus 5-factor solution proposed by Wallwork et al[3]. For both dimensions, higher scores represent greater symptom severity.

Negative symptoms were assessed using the Brief Negative Symptom Scale (BNSS)[4,5]. The scores of the two domains Avolition (sum of anhedonia, asociality and avolition) and Expressive deficit (sum of blunted affect and alogia) were used in statistical analyses (higher scores correspond to greater severity).

Depressive symptoms were evaluated by the Calgary Depression Scale for Schizophrenia (CDSS)[6]; the total score was used in data analyses (higher scores correspond to greater severity of depression). Extrapyramidal symptoms – i.e., hyperkinesia, parkinsonism, akathisia and dystonia – were assessed by means of the St. Hans Rating Scale (SHRS)[7] (higher scores represent greater symptom severity).

The Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS) Consensus Cognitive Battery (MCCB)[8,9] was used to assess the following

neurocognitive domains: processing speed, attention/vigilance, working memory, verbal learning, visual learning, social cognition, and reasoning and problem solving (for all domains, higher scores represent better cognitive functioning). The assessment of social cognition, partly included in the MCCB (Mayer-Salovey-Caruso Emotional Intelligence Test, MSCEIT, managing emotion section), was integrated by the Facial Emotion Identification Test (FEIT)[10], measuring emotion recognition, and The Awareness of Social Inference Test (TASIT)[11], assessing theory of mind. For each social cognition test, higher scores correspond to better cognitive functioning.

Psychiatric comorbidities were assessed using the Structured Clinical Interview for DSM-IV - Patient Version (SCID-I/P)[12]. Physical comorbidities were evaluated using the Physical Health Inventory[13], which explores the presence of the following physical conditions: Metabolic syndrome; Arteriosclerotic heart disease; Diabetes; Serious respiratory disorder; Obesity; Arthritis; Hearing impairment; Speech impairment; Parkinson's disease; Tardive dyskinesia; Cancer of a major organ or system.

Assessment of personal resources

The Resilience Scale for Adults (RSA)[14], a self-administered scale, was used to assess perception of self, perception of the future, social competence, and family cohesion (higher scores correspond to higher resilience).

The Service Engagement Scale (EnS)[15] measured patients' levels of difficulty to engage with mental health services (higher total score represents greater difficulty).

Evaluation of context-related factors

The Internalized Stigma of Mental Illness (ISMI)[16] questionnaire evaluated the experience of internalized stigma (higher total score corresponds to greater experience of internalized stigma).

The number of available incentives was registered as a count variable, ranging from 0 to 4, and included the availability of a disability pension, access to family practical and financial support, and registration in the unemployment list.

Assessment of functional capacity and real-life functioning

The short version of the University of California San Diego (UCSD) Performance-based Skills Assessment Brief (UPSA-B)[17] was used to assess functional capacity. The total score was used (higher score corresponds to better capacity).

Real-life functioning was evaluated using the Specific Level of Functioning Scale (SLOF)[18], an instrument assessing several aspects of functioning, based on the key caregiver's judgment on behavior and functioning of the patient. SLOF domains "Interpersonal relationships", "Everyday life skills" and "Work skills" were included in statistical analyses. For each domain, higher score corresponds to better real-life functioning.

Training of researchers and inter-rater reliability

Researchers were trained by the coordinating center 2 months before the beginning of the follow-up recruitment, to ensure consistency with the baseline data collection procedures.

For each assessment domain (illness-related factors, personal resources and context-related factors), at least one researcher per site was trained. In order to avoid halo effects, the same researcher could not be trained in more than one assessment area.

The inter-rater reliability was evaluated by Cohen's kappa for categorical variables, and intraclass correlation coefficient (ICC) for continuous variables. For items showing a small degree of variation among patients, the percentage of perfect agreement was calculated.

An excellent inter-rater agreement was found for the SCID-I-P (Cohen's kappa=0.91). Good to excellent agreement was observed for SLOF (ICC=0.58-1, percentage agreement=70-100%), BNSS (ICC=0.74-0.97), PANSS (ICC=0.60-0.98, percentage agreement=64-100%), CDSS (ICC=0.76-0.98) and MCCB (ICC=0.98).

Details on structural equation modeling (SEM) and latent change score (LCS) modeling

In both the SEM and LCS, baseline neurocognition and social cognition were expressed as latent variables, i.e., linear composites of the individual cognitive domain scores, while real-life functioning and the other independent variables were used as observed variables.

SEM

An initial SEM included all possible relationships between the three domains of functioning at t_1 and all the other variables at t_0 (eTable 3). The final model was obtained by removing non-significant relationships, and adding new clinically grounded significant relationships suggested by modification indices. Correlations between

residuals were added to the SEM only for variables belonging to the same construct and with r≥0.15, to avoid over-parameterization of the model while adding only little information and model fit improvement.

The internal consistency of the three scales of functioning was very high, both at t_0 and t_1 (Cronbach's alpha ranging from 0.880 to 0.917 and 0.891 to 0.944, respectively), thus enabling the use of the observed variables without adjusting for intrasubject unreliability[19].

LCS

In an LCS model, the difference between baseline and follow-up is defined, for each specified domain, by a latent change variable. Latent change variables are related to their own baseline values through an autoregressive parameter, and to the baseline values of the other domains by a regression coefficient (cross-domain coupling) which captures the extent to which change in one domain depends on the baseline level in the other.

LCS modeling requires the measurement invariance of latent domains to ensure that the latent constructs are measured in the same way at the two time-points[20]; therefore, we constrained the factor loadings, residual variances and items intercepts of neurocognition and social cognition at follow-up to be equal to those estimated at baseline. Correlations among the baseline variables and among the latent change variables were also estimated, to investigate the degree of co-occurrence of changes, after adjusting for cross-domain couplings. Statistics relevant to the initial LCS model are reported in eTable 10.

For correlation coefficients, the p-value in large samples tends to be significant even for weak associations, thus these coefficients were interpreted based on their absolute value:

coefficients from 0.10 to 0.30 were interpreted as indicative of weak correlations, from 0.30 to 0.49 as moderate correlations, from 0.50 to 1 as strong correlations[21].

Further details

In both SEM and LCS models, neurocognition, social cognition and functional capacity were standardized with respect to the Italian normative database. Real-life functioning and the independent variables were used as z-scores in the SEM, while in LCS their original metrics were maintained.

Control analyses

The model fit and association consistency of the final SEM was tested in two random equal size subsamples (N=309), i.e., a training and a test subsample.

To test for a possible effect of the center (N=24), goodness of fit of the model was repeatedly tested in subsamples obtained by excluding sequentially from 1 to 14 centers, starting from the one with the largest number of recruited patients, thus progressively reducing the number of patients included in the analysis from 572 to 180.

We also tested the effect of treatment by checking goodness of fit of the model in a homogeneous subsample treated with second-generation antipsychotics only.

eAppendix 2. Results of Control Analyses

The results of control analyses run to test for potential SEM overfitting and site effect are reported hereafter.

The first analysis (eTable 5) showed that, in the training subsample, the fit of the final SEM was good: RMSEA=0.044 (95% CI: 0.037-0.051); CFI=0.941; TLI=0.930. A few associations were no more significant, namely those between available incentives and everyday life skills at follow-up, and between neurocognition and work skills at follow-up. For the latter association, the regression coefficient changed only slightly (from 0.101 to 0.094), but became non-significant because of the reduced sample size. Therefore, it was retained in the SEM run in the test subsample. In this latter subsample, the fit of the model was very good: RMSEA=0.034 (95% CI: 0.025-0.043); CFI=0.967; TLI=0.961. The associations of baseline positive symptoms and social cognition with work skills at follow-up lost statistical significance. However, variations in the level of significance were regarded as most likely due to the reduced sample size.

The control analysis testing for a possible site effect (eTable 6) revealed no change in the model goodness of fit obtained in the total sample when excluding up to 14 centers from the analysis.

The goodness of fit of the model was also confirmed in the subsample of subjects treated with second-generation antipsychotics only (n=441): RMSEA=0.037 (95% CI: 0.031-0.043); CFI=0.958; TLI=0.950.

eTable 1. Sociodemographic and Clinical Characteristics of the Study Population at Baseline (N=618)

Variable (N. available observations)	Mean±SD or n (%)	Min; Max
Age	40.4 ± 10.5	18; 66
Male gender	427 (69.1)	
Education (years, 616)	11.7 ± 3.4	5; 22
Working (596)	174 (29.2)	
Living arrangement (615)		
Alone	82 (13.3)	
Married/in a partnership	58 (9.4)	
Parents/relatives	365 (59.4)	
Community/friends	80 (13.0)	
Other	30 (4.9)	
Stable affective relationships (615)	92 (14.9)	
Legal problems	52 (8.4)	
Pharmacological treatment		
First-generation antipsychotics	92 (14.9)	
Second-generation antipsychotics	432 (69.9)	
Both	84 (13.6)	
None	10 (1.6)	

eTable 2. Within-Subject Comparisons of Follow-up Versus Baseline Characteristics

Variable (N. available observations)	Baseline	Follow-up	Test (McNemar/t); p
Education (N=615); years, mean±SD	11.76±0.13	11.72±0.14	-0.65; .51
Supported housing (N=611), N (%)	76 (12.4)	62 (10.1)	4.67; .03
Working (N=588); N (%)	170 (28.9)	208 (35.4)	12.0; <.001
Stable affective relationships (N=610); N (%)	92 (15.1)	115 (18.8)	8.40; .004
Presence of legal problems (N=612); N (%)	52 (8.5)	8 (1.3)	37.2; <.001
Subjects treated with second-generation antipsychotics (N=618); N (%)	432 (69.9)	441 (71.4)	0.61; .43

eTable 3. Initial Structural Equation Model (SEM)

Baseline variables	Everyday life skills at follow-up	Interpersonal relationships at follow-up	Work skills at follow-up	Everyday life skills at baseline	Interpersonal relationships at baseline	Work Skills at baseline	Social cognition	Functional capacity	Resilience	Stigma	Engage-ment with services
Everyday life skills	0.462 (0.383; 0.541) <.001	-0.026 (-0.122; 0.070) .60	0.164 (0.076; 0.252) <.001				-		-		-
Interpersonal relationships	0.019 (-0.053; 0.091) .60	0.332 (0.252; 0.413) <.001	-0.015 (-0.091; 0.062) .70				-		-		-
Work skills	0.036 (-0.040; 0.113) .35	0.065 (-0.023; 0.154) .15	0.283 (0.203; 0.362) <.001				-		-		-
Neurocognition	0.238 (0.113; 0.362) <.001	0.068 (-0.076; 0.212) .36	0.093 (-0.039; 0.225) .17	0.038 (-0.095; 0.170) .58	-0.118; (-0.266; 0.031) .12	0.052 (-0.089; 0.193) .47	0.624 (0.551;0.697) <.001	0.570 (0.504; 0.636) <.001	-	-0.214 (-0.294; -0.133) <.001	-0.218 (-0.301; -0.135) <.001
Social cognition	-0.026 (-0.144; 0.092) .67	0.120 (-0.014; 0.254) .08	0.148 (0.023; 0.272) .02	0.125 (0.002; 0.248) .05	0.206 (0.069; 0.343) .003	0.131 (0.000; 0.262) .05	-		-		-
Avolition	0.042 (-0.028; 0.112) .24	-0.108 (-0.189; -0.026) .009	-0.002 (-0.077; 0.073) .96	-0.078 (-0.149; -0.006) .03	-0.336 (-0.413; -0.260) <.001	-0.160 (-0.236; -0.084) <.001	-		-0.171 (-0.251; -0.091) <.001	0.191 (0.115; 0.267) <.001	0.040 (-0.038; 0.118) .32
Disorganization dimension	-0.050 (-0.133; 0.034) .24	-0.005 (-0.102; 0.092) .92	-0.053 (-0.141; 0.036) .24	-0.209 (-0.296; -0.122) <.001	0.003 (-0.096; 0.101) .96	-0.126 (-0.220; -0.033) .008	-0.211 (-0.290; -0.133) <.001	-0.190 (-0.260; -0.120) <.001			
Positive dimension	-0.003 (-0.073; 0.066) .92	-0.069 (-0.149; 0.012) .09	-0.063 (-0.137; 0.011) .09	-0.076 (-0.150; -0.002) .04	-0.013 (-0.096; 0.069) .75	-0.086 (-0.165; -0.007) .03	-		-		0.147 (0.069; 0.224) <.001
Functional capacity	0.053 (-0.034;	-0.030 (-0.131;	0.003 (-0.090;	0.249 (0.159;	0.030 (-0.072;	0.147 (0.050;					

	0.141) .23	0.070) .56	0.095) .96	0.340) <.001	0.132) .56	0.244) .003					
Stigma									-0.549 (-0.618; -0.480) <.001		
Resilience	0.028 (-0.044; 0.100) .44	0.055 (-0.029; 0.138) .20	0.034 (-0.043; 0.110) .39	0.018 (-0.059; 0.094) .65	0.135 (0.049; 0.222) .002	0.039 (-0.043; 0.120) .35					
Engagement with services	-0.027 (-0.090; 0.035) .39	-0.015 (-0.087; 0.057) .68	-0.060 (-0.126; 0.006) .08	-0.100 (-0.167; -0.033) .003	-0.081 (-0.155; -0.007) .031	-0.069 (-0.140; 0.003) .06					
Number of incentives	0.070 (0.010; 0.131) .02	0.051 (-0.020; 0.121) .16	-0.004 (-0.068; 0.061) .91	-0.109 (-0.174; -0.045) .001	-0.066 (-0.138; 0.005) .07	-0.136 (-0.205; -0.067) <.001	-		-		-

Table cells: standardized regression coefficient; 95% confidence intervals (in brackets); p-value

eTable 4. Direct and Indirect Effects of Baseline Variables on the Three Real-Life Functioning Domains At t_0 (Within t_0 Effects) Estimated in the Final Structural Equation Model

	Real-life functioning domains at baseline					
	Everyday life skills		**Interpersonal relationships**		**Work skills**	
	Direct effects	Indirect effects	Direct effects	Indirect effects	Direct effects	Indirect effects
Neurocognition	-	0.270 (0.213; 0.328) <.001	-	0.120 (0.068; 0.171) <.001	-	0.220 (0.160; 0.279) <.001
Social cognition	0.150 (0.060; 0.240) <.001	-	0.140 (0.060; 0.220) .001	-	0.172 (0.076; 0.269) <.001	-
Functional capacity	0.266 (0.190; 0.341) <.001	-	-	-	0.166 (0.057; 0.248) <.001	-
Incentives	-0.093 (-0.154; -0.031) .003	-	-	-	-0.122 (-0.189; -0.055) <.001	-
Avolition	-0.086 (-0.153; -0.018) .013	-	-0.346 (-0.418; -0.274) <.001	-0.037 (-0.066; -0.008) .011	-0.175 (-0.247; -0.104) <.001	-
Positive dimension	-0.071 (-0.141; -0.002) .04	-0.015 (-0.028; -0.003) .02	-	-0.012 (-0.025; 0.001) .06	-0.082 (-0.158; -0.006) .03	-0.011 (-0.023; 0.001) .08
Disorganization dimension	-0.207 (-0.289; -0.124) <.001	-0.081 (-0.110; -0.052) <.001	-	-0.013 (-0.038; 0.012) .32	-0.121 (-0.211; -0.031) .008	-0.067 (-0.094; 0.040) <.001
Resilience	-	-	0.114 (0.034; 0.195) .005	-	-	-

Stigma	-	-	-	-0.065 (-0.111; 0.018) .006	-	-
Engagement with Services	-0.102 (-0169; -0.036) .003	-	-0.080 (-0.152; -0.007) .03	-	-0.072 (-0.143; -0.001) .05	-

Table cells: standardized regression coefficients; 95% confidence intervals (in brackets); p-values

eTable 5. Split Sample Cross-Validation of the Final Structural Equation Model (SEM): Standardized Coefficients of the Effects of Baseline Variables on the Three Real-Life Functioning Domains at Follow-up in the Training and Test Samples

A) TRAINING sample (n=309)	**Real-life functioning domains at follow-up**					
	Everyday life skills		**Interpersonal relationships**		**Work skills**	
Baseline variable	Direct effect Estimate (p)	Indirect effect Estimate (p)	Direct effect Estimate (p)	Indirect effect Estimate (p)	Direct effect Estimate (p)	Indirect effect Estimate (p)
Avolition	-	-	-0.129 (-0.221; -0.037) .006	-	-	-
Disorganization dimension	-	-	-	-0.053 (-0.088; -0.017) .004	-	-0.057 (-0.100; -0.014) .01
Positive dimension	-	-	-	-	-0.079 (-0.153; -0.005) .04	-
Neurocognition	0.289 (0.195; 0.383) <.001	-	-	0.125 (0.056; 0.194) <.001	0.094 (-0.036; 0.225) .15	0.135 (0.047; 0.222) .003
Available incentives	-	-	-		-	-
Engagement with services	-	-	-	-	-	-
Social cognition	-	-	0.206 (0.100; 0.312) <.001	-	0.223 (0.086; 0.360) .001	-
Functional capacity	-	-	-	-	-	-
Stigma	-	-	-	-	-	-
Resilience	-	-	-	-	-	-
Everyday life skills	0.505 (0.427; 0.583) <.001	-	-	-	0.262 (0.165; 0.359) <.001	-
Interpersonal relationships	-	-	0.339 (0.249; 0.430) <.001	-	-	-
Work skills	-	-	-	-	0.180 (0.091; 0.270) <.001	-

B) TEST sample (n=309)	Real-life functioning domains at follow-up					
	Everyday life skills		**Interpersonal relationships**		**SLOF Work skills**	
Baseline variable	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect
Avolition	-	-	-0.129 (-0.218; -0.041) .004		-	-
Disorganization dimension	-	-	-	-0.038 (-0.067; -0.009) .01	-	-0.026 (-0.057; 0.005) .10
Positive dimension	-	-	-	-	-0.038 (-0.114; 0.037) .32	-
Neurocognition	0.244 (0.148; 0.339) <.001	-	-	0.115 (0.048; 0.181) .001	0.133 (0.002; 0.264) .05	0.077 (-0.006; 0.161) .07
Available incentives	-	-	-	-	-	-
Engagement with services	-	-	-	-	-	-
Social cognition	-	-	0.186 (0.084; 0.289) <.001	-	0.126 (-0.008; 0.260) .07	-
Functional capacity	-	-	-	-	-	-
Stigma	-	-	-	-	-	-
Resilience	-	-	-	-	-	-
Everyday life skills	0.523 (0.442; 0.604) <.001	-	-	-	0.143 (0.045; 0.241) .004	-
Interpersonal relationships	-	-	0.355 (0.265; 0.445) <.001	-	-	-
Work skills	-	-	-	-	0.332 (0.246; 0.419) <.001	-

Table cells: standardized regression coefficient; 95% confidence intervals (in brackets); p-value

eTable 6. Control Analysis for the Site Effect

Goodness of fit of the final model in subsamples obtained by excluding sequentially from 1 to 14 centers.

Number of centers left out	Residual N	RMSEA	95% CI RMSEA	CFI	TLI
1	572	0.038	0.034-0.043	0.956	0.948
2	532	0.038	0.033-0.043	0.957	0.949
3	494	0.036	0.031-0.042	0.960	0.952
4	460	0.039	0.033-0.045	0.954	0.946
5	428	0.039	0.033-0.045	0.955	0.947
6	398	0.038	0.031-0.044	0.958	0.950
7	369	0.037	0.031-0.044	0.958	0.950
8	340	0.038	0.030-0.045	0.958	0.950
9	312	0.038	0.030-0.046	0.956	0.947
10	284	0.041	0.032-0.048	0.949	0.939
11	258	0.038	0.028-0.046	0.954	0.946
12	232	0.038	0.028-0.048	0.954	0.946
13	206	0.039	0.028-0.049	0.952	0.943
14	180	0.043	0.031-0.053	0.944	0.933

RMSEA=root mean square error of approximation; CI=confidence intervals; CFI=comparative fit index; TLI=Tucker-Lewis index

eTable 7. Multiple Linear Regression of Work Skills at Follow-up on Variables Used in the Structural Equation Model and Physical and Psychiatric Comorbidities

	SLOF Work skills at follow-up					
	FULL MODEL (n=580, R^2=0.413)			**FINAL MODEL (n=599, R^2=0.400)**		
Baseline variables	**Coef.**	**95% C.I.**	**p-value**	**Coef.**	**95% C.I.**	**p-value**
SLOF Work skills	0.292	0.207; 0.377	<.001	0.296	0.215; 0.377	<.001
SLOF Interpersonal relationships	-0.022	-0.102; 0.059	.59			
SLOF Everyday life skills	0.135	0.067; 0.203	<.001	0.151	0.089; 0.212	<.001
Disorganization dimension	-0.483	-1.031; -0.066	.08			
Positive dimension	-0.408	-0.879; 0.063	.00	-0.630	-1.052; -0.207	.004
Avolition	0.016	-0.457; 0.489	.95			
Neurocognition	0.614	0.038; 1.190	.04	0.830	0.312; 1.348	.002
Social cognition	0.787	0.317; 1.258	.001	0.803	0.358; 1.249	<.001
Functional capacity	0.065	-0.265; 0.395	.70			
Incentives	-0.114	-0.521; 0.293	.58			
Stigma	0.473	0.001; 0.946	.05	0.491	0.028; 0.955	.04
Resilience	0.873	0.239; 1.507	.007	0.764	0.150; 1.378	.01
Engagement with services	-0.436	-0.867; -0.005	.05			
Any physical comorbidity	-0.003	-0.982; 0.977	.99	-0.058	-1.015; 0.898	.90

Any psychiatric comorbidity	0.378	-0.587; 1.342	.44	0.166	-0.773; 1.106	.73
Constant	10.223	6.910; 13.536	<.001	9.154	6.238; 12.071	<.001

SLOF=Specific Level of Functioning Scale

eTable 8. Multiple Linear Regression of Everyday Life Skills at Follow-up on Variables Used in the Structural Equation Model and Physical and Psychiatric Comorbidities

	SLOF Everyday life skills at follow-up					
	FULL MODEL ($n=576$, $R^2=0.480$)			**FINAL MODEL ($n=580$, $R^2=0.472$)**		
Baseline variables	**Coef.**	**95% C.I.**	**p-value**	**Coef.**	**95% C.I.**	**p-value**
SLOF Everyday life skills	0.552	0.453; 0.651	<.001	0.596	0.514; 0.678	<.001
SLOF Interpersonal relationships	0.044	-0.073; 0.160	.46			
SLOF Work skills	0.048	-0.076; 0.173	.45			
Disorganization dimension	-0.463	-1.261; 0.334	.25			
Positive dimension	0.086	-0.595; 0.767	.80			
Avolition	0.367	-0.320; 1.053	.29			
Neurocognition	1.830	0.995; 2.665	<.001	2.100	1.333; 2.867	<.001
Social cognition	0.331	-0.351; 1.013	.34			
Functional capacity	0.421	-0.058; 0.900	.08	0.536	0.076; 0.997	.02
Incentives	0.570	-0.022; 1.161	.06	0.571	-0.005; 1.147	.05
Stigma	0.261	-0.424; 0.945	.45			
Resilience	0.662	-0.257; 1.580	.16			
Engagement with services	-0.326	-0.952; 0.299	.31			

Any physical comorbidity	-0.668	-2.091; 0.754	.36	-0.645	-2.045; 0.755	.37
Any psychiatric comorbidity	0.571	-0.825; 1.967	.44	0.479	-0.894; 1.853	.49
Constant	21.134	16.335; 25.933	<.001	21.221	16.853; 25.589	<.001

SLOF=Specific Level of Functioning Scale

eTable 9. Multiple Linear Regression of Interpersonal Relationships at Follow-up on Variables Used in the Structural Equation Model and Physical and Psychiatric Comorbidities

	SLOF Interpersonal relationships at follow-up					
	FULL MODEL ($n=580$, $R^2=0.282$)			**FINAL MODEL ($n=608$, $R^2=0.276$)**		
Baseline variables	**Coef.**	**95% C.I.**	**p-value**	**Coef.**	**95% C.I.**	**p-value**
SLOF Interpersonal relationships	0.333	0.244; 0.419	<.001	0.355	0.274; 0.432	<.001
SLOF Everyday life skills	-0.008	-0.083; 0.066	.83			
SLOF Work skills	0.077	-0.015; 0.169	.10			
Disorganization dimension	-0.147	-0.750; 0.440	.63			
Positive dimension	-0.381	-0.897; 0.124	.14	-0.524	-0.972; -0.093	.02
Avolition	-0.743	-1.251; -0.225	.005	-0.797	-1.262; -0.316	.001
Neurocognition	0.509	-0.107; 1.141	.11			
Social cognition	0.731	0.236; 1.256	.005	0.974	0.579; 1.388	<.001
Functional capacity	-0.104	-0.473; 0.243	.57			
Incentives	0.279	-0.155; 0.727	.22			
Stigma	0.571	0.077; 1.107	.03	0.604	0.124; 1.119	.02
Resilience	0.977	0.296; 1.668	.005	0.981	0.323; 1.650	.004
Engagement with services	-0.076	-0.553; 0.381	.75			

Any physical comorbidity	0.565	-0.530; 1.595	.30	0.383	-0.649; 1.359	.45
Any psychiatric comorbidity	0.689	-0.102; 2.084	.20	0.707	-0.141; 1.960	.17
Constant	14.501	10.945; 18.132	<.001	15.110	13.157; 17.129	<.001

SLOF=Specific Level of Functioning Scale

eTable 10. Initial Latent Change Score Model

Baseline measures	**Estimated latent change score**				
	Δ Everyday life skills (11.116; p<0.001; R^2=0.200)	Δ Interpersonal relationships (12.873; p<0.001; R^2=0.339)	Δ Work skills (2.369; p=0.210; R^2=0.360)	Δ Social cognition (7.450; p<0.001; R^2=0.158)	Δ Functional capacity (-2.216; p=0.552; R^2=0.229)
Avolition	0.015 (-0.044; 0.074) .63	-0.092 (-0.136; -0.049) <.001	-0.019 (-0.059; 0.021) .35		
Positive dimension	0.016 (-0.109; 0.141) .80	-0.064 (-0.159; 0.031) .19	-0.085 (-0.165; 0.005) .04		
Neurocognition	0.207 (0.021; 0.392) .03	-0.032 (-0.154; 0.090) .61	0.045 (-0.071; 0.160) .45	0.120 (0.001; 0.239) .05	1.060 (0.722; 1.399) <.001
Social cognition	0.109 (-0.055; 0.274) .19	0.182 (0.063; 0.301) .003	0.213 (0.106; 0.320) <.001	-0.272 (-0.416; -0.128) <.001	
Functional capacity	0.035 (-0.001; 0.070) .06	-0.005 (-0.030; 0.020) .69	0.005 (-0.017; 0.028) .64		-0.558 (-0.646; -0.471) <.001
Everyday life skills	-0.507 (-0.614; -0.400) <.001	-0.050 (-0.113; 0.014) .15	0.101 (0.045; 0.157) <.001	0.022 (-0.038; 0.083) .47	0.509 (0.300; 0.718) <.001
Interpersonal relationships	0.005 (-0.097; 0.106) .93	-0.687 (-0.770; -0.603) <.001	-0.029 (-0.100; 0.041) .42	0.008 (-0.056; 0.072) .81	0.000 (-0.233; 0.233) .99
Work skills	0.046 (-0.063; 0.154) .41	0.059 (-0.034; 0.151) .21	-0.707 (-0.791; -0.622) <.001	0.006 (-0.063; 0.075) .86	0.001 (-0.253; 0.254) .99

Table column headings: Estimated latent change score from baseline to 4-year follow-up; in parentheses: Δ=estimated change; p-value and explained variance R^2 of the latent change. Table cells: regression coefficients; 95% confidence intervals (in brackets); p-values

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