Department of Psychiatry

Cognitive predictors of Functional and Treatment Response in Treatment Resistant Psychosis: A transdiagnostic approach

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Introduction

Patients with primary psychotic disorders who fail to respond adequately to standard antipsychotic treatments are defined as treatment resistant. While neuropsychological assessment is crucial for evaluating cognitive impairment, its utility in predicting functional and treatment outcomes in individuals with treatment-resistant psychosis (TRP) remains understudied. This study investigates whether neuropsychological functioning predicts functional and treatment outcomes in TRP, utilizing a transdiagnostic approach.

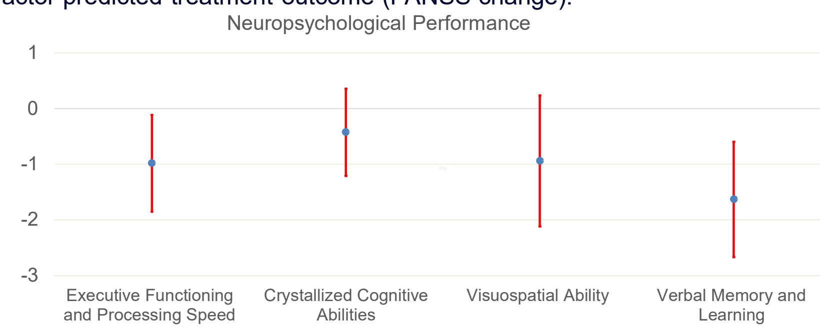
Methodology

The British Columbia Psychosis Program's clinical data from 2012–2021 were examined in this retrospective analysis. This included inpatients (18+) with a primary psychotic disorder who did not respond well to at least two antipsychotics and who made a sufficient effort to complete cognitive tests. Premorbid IQ, verbal and nonverbal skills, processing speed, working memory, and executive functions were evaluated using a core neuropsychological test battery. The RAPP Life Skills subscale (functional capacity) and SOFAS (functional performance upon admission) were used to measure functioning. Descriptive statistics, z-score conversion, correlations, and principal component regression (PCR) were among the statistical techniques used to evaluate the link between cognitive characteristics and functioning/treatment response, where suitable, while adjusting for the severity of the original symptoms.

Demographics and Sample Characteristics (N=206)		
Continous Variable	**M**	**SD**
Education (years)	11.77	2.07
Duration of illness (years)	12.99	10.43
PANSS		
Positive Symptoms	21.49	6.25
Negative Signs	19.66	6.98
Disorganization	27.48	6.77
Excitement	9.3	4.69
Emotional Distress	10.35	3.83
Total	88.3	17.34
RAPP		
Basic needs	3.21	2.06
Psychopathology	7.95	3.93
Life Skills	4.87	3.44
Total	16.03	7.54
SOFAS	30.5	7.01
Categorical Variable	**N**	**%**
Age at admission	Median (36.78)	Range (18-76)
Sex		
Female	57	27.7%
Male	149	72.3%
Ethnic group		
White	141	68.4%
Chinese/East Asian	22	10.7%
Hispanic	2	1%
First Nations	13	6.3%
South Asian	13	6.3%
Other/Mixed	14	6.8%
Missing	1	.5%
Primary Diagnosis (%)		
Schizophrenia	135	65.5%
Delusional Disorder	4	1.9%
PNOS	7	3.4%
Schizoaffective	45	21.8%
Bipolar	7	3.4%
Major depression	4	1.9%
Other	2	1%
Missing	2	1%

Results

Of 470 initial patients, 206 with treatment-resistant psychosis were analyzed. Included patients showed below-average performance across most cognitive domains. Individual cognitive tests showed small positive correlations with SOFAS (functional performance) and limited small negative correlations with RAPP Life Skills (functional capacity). PCA revealed four cognitive factors: Executive Functioning/Processing Speed, Crystallized Abilities, Visuospatial Ability, and Verbal Memory/Learning. These factors significantly predicted SOFAS scores, but only Crystallized Abilities and Verbal Memory remained significant after controlling for initial symptoms. Executive Functioning/Processing Speed predicted RAPP Life Skills without symptom control but was not significant when controlling for symptoms. No cognitive factor predicted treatment outcome (PANSS change).



Conclusions

TRP patients exhibited cognitive deficits, consistent with existing research. Four comparable cognitive factors were identified. While cognition correlated with SOFAS, its ability to predict both SOFAS and RAPP decreased when accounting for symptoms, indicating a strong symptom impact on inpatient functioning. The varying associations with SOFAS (performance) and RAPP (capacity) likely reflect their different focus and the structured environment. Surprisingly, cognition didn't predict treatment outcome, possibly due to treatment variations and limited response in this population. This research supports a transdiagnostic approach and emphasizes the intricate relationship between cognition, symptoms, and functioning in TRP.