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# Evaluation of cognitive functions among Lebanese patients with schizophrenia

Chadia Haddad<sup>1,2,3</sup>, Pascale Salameh<sup>3,4</sup>, Hala Sacre<sup>3</sup>, Jean-Pierre Clément<sup>1,5</sup>, Benjamin Calvet<sup>1,5</sup>

1. Inserm U1094, IRD U270, Univ. Limoges, CHU Limoges, EpiMaCT - Epidemiology of chronic diseases in tropical zone, Institute of Epidemiology and Tropical Neurology, OmegaHealth, Limoges, France
2. Research Department, Psychiatric Hospital of the Cross, P.O. Box 60096, Jal Eddib, Lebanon
3. INSPECT-LB (Institut National de Santé Publique, d'Épidémiologie Clinique et de Toxicologie-Liban), Beirut, Lebanon
4. School of Medicine, Lebanese American University, Byblos, Lebanon
5. Pôle Universitaire de Psychiatrie de l'Adulte, de l'Agé et d'Addictologie, centre hospitalier Esquirol, 87000 Limoges, France



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## Introduction

- Many cognitive functions are affected in schizophrenia patients, particularly memory, attention, motor skills, executive function, and social cognition.
- Patients with schizophrenia have problems with self-assessment abilities of their cognitive deficits and everyday social consequences.
- Cognitive assessment is one of the best indicators of the functional and social prognosis of patients with schizophrenia.
- In Lebanon, no study has yet examined the assessment (objective and subjective) of cognitive functions in patients with neurological or psychiatric diseases.

## Objectives

- To validate a diagnostic and screening tool for cognitive disorders among patients with schizophrenia.
- To evaluate subjective cognitive complaints and related factors among these patients.

## Materials & Methods

- A cross-sectional study was conducted at the Psychiatric Hospital of the Cross, Lebanon, between July 2019 and Mars 2020.
- The study enrolled 120 inpatients diagnosed with schizophrenia and 60 healthy controls, matched for age, education, and sex.
- BACS (Brief Assessment of Cognition in Schizophrenia) and MOCA (Montreal Cognitive Assessment) were used to assess cognition.
- ACSo (Self-Assessment of Social Cognition) and SASCCS (Self-Assessment Scale of Cognitive Complaints in Schizophrenia) scales were administered to assess patients' perception of their cognitive impairment.

## Results

### Validation of the cognitive tests

#### Validation of the BACS battery

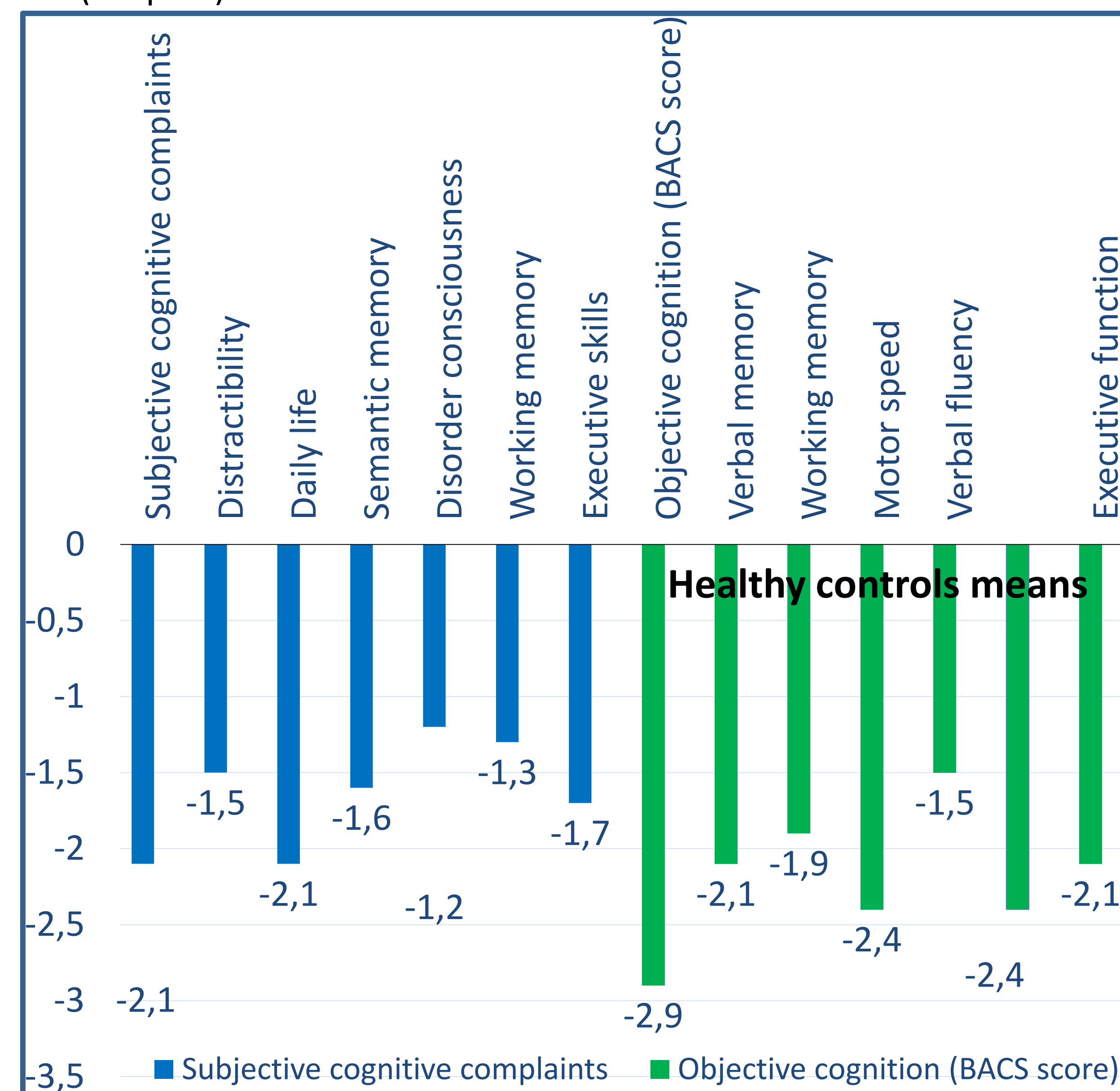
- The BACS composite scores were significantly correlated with the standard battery composite scores in patients with schizophrenia ( $r = .73$ ,  $p < .001$ ) and healthy controls ( $r = .78$ ,  $p < .001$ ).
- High reliability (Cronbach alpha = .85) with a one-factor structure
- High sensitivity (Se) = .93 and specificity (Sp) = .86

#### Validation of the MOCA test

- The MoCA test was significantly correlated with the BACS total score ( $r = .72$ ,  $p < .001$ ).
- High reliability (Cronbach alpha = .80) with a one-factor structure.
- Good ability in detecting mild (Se = .81, Sp = .75) and moderate (Se = .81, Sp = .81) to severe cognitive (Se = .93, Sp = .85) impairments.

### Neurocognition vs. subjective cognitive complaints

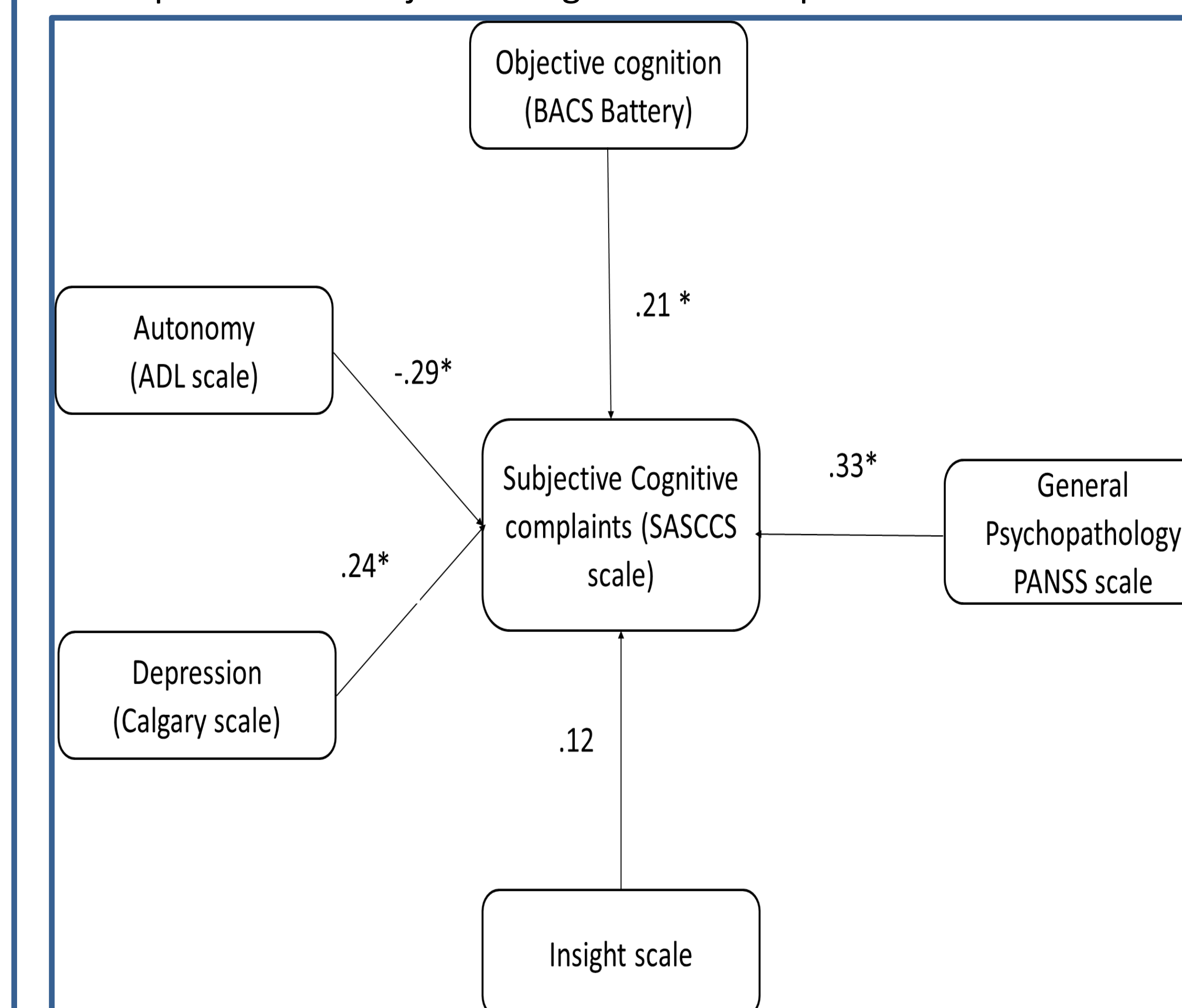
- All objective cognitive disorders were significantly associated with social and subjective cognitive complaints.
- The schizophrenia group scored significantly higher mean than the healthy control in all cognitive tests (Subjective and objective tests) (Graph 1).



Graph 1. Composite scores for the total subjective cognitive complaint and objective cognition and subtests in patients with schizophrenia standardized to healthy controls

### Factors related to subjective cognitive complaint

- The two most contributing variables to subjective cognitive complaints were general psychopathology (Standardized Beta (SB): .33,  $p < 0.001$ ) and autonomy (SB: -.29,  $p < 0.001$ ), followed by depression (SB: 0.24,  $p < 0.001$ ) and objective cognition (SB: -.021,  $p = .003$ ) (Graph 2).
- The two most predictive variables of subjective social cognitive complaints were objective cognition and depression.



Graph 2: Standardized regression weights of the relationships between neurocognition, clinical symptoms, depression, insight, autonomy, and subjective cognitive complaints ( $p < 0.05$ ). Values with \* indicate significant associations

## Discussion

- The validation of the Arabic BACS were adequate, with high internal consistency, appropriate concurrent validity, and good overall discriminant validity.
- The MoCA demonstrated adequate concurrent validity, good ability in detecting mild to severe cognitive impairments in patients with schizophrenia and good reliability with one-factor structure.
- Patients with schizophrenia have complaints about their cognition and found a correlation between neurocognition and social and subjective cognitive complaints (SCC).
- A lack of association was found between insight and cognitive complaints.
- A positive correlation was found between depression and SCC, suggesting that this aspect should be investigated along with the clinical symptoms.

## Conclusions

- The results showed that the Arabic BACS and the MOCA are reliable and suitable tools for measuring cognitive performance.
- Patients with schizophrenia complain about their cognition.
- Further prospective studies are needed to better understand cognitive impairment in patients with schizophrenia.

For more information about our group and to explore the prospect of collaboration please

contact us at:

[chadia\\_9@hotmail.com](mailto:chadia_9@hotmail.com)