

# On cognition and personality in bipolar disorder

## Akademisk avhandling

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligens försvaras i Ivan Östholm, Medicinaregatan 13, fredagen den 14 juni klockan 13:00

av Timea Sparding

## Fakultetsopponent:

Seniorprofessor Aniko Bartfai

Institutionen för kliniska vetenskaper, Danderyds sjukhus  
Karolinska Institutet, Stockholm

## Avhandlingen baseras på följande delarbeten:

- I. Sparding, T., Silander, K., Pålsson, E., Östlind, J., Sellgren, C., Ekman, C. J., Joas, E., Hansen, S., & Landén, M. (2015). Cognitive functioning in clinically stable patients with bipolar disorder I and II. *PLoS One*, 10(1): e0115562.
- II. Sparding, T., Silander, K., Pålsson, E., Östlind, J., Ekman, C. J., Sellgren, C. M., Joas, E., Hansen, S., & Landén, M. (2017). Classification of cognitive performance in bipolar disorder. *Cognitive Neuropsychiatry*, 22(5), 407-421.
- III. Salarvan, S., Sparding, T., Clements, C., Rydén, E., & Landén, M. Neuropsychological profiles of adult bipolar disorder patients with and without comorbid attention-deficit hyperactivity disorder. Manuscript.
- IV. Sparding, T., Joas, E., Clements, C., Sellgren, C., Pålsson, E., & Landén, M. Long-term trajectory of cognition in bipolar disorder and controls: a 6-year follow-up study. Manuscript.
- V. Sparding, T., Pålsson, E., Joas, E., Hansen, S., & Landén, M. (2017). Personality traits in bipolar disorder and influence on outcome. *BMC Psychiatry*, 17(1), 159.
- VI. Sparding, T., Pålsson, E., Sellgren, C., Landén, M., & Hansen, S. Different relationship between cognition and personality in bipolar disorder and healthy controls. Manuscript.

**SAHLGRENSKA AKADEMIN  
INSTITUTIONEN FÖR  
NEUROVETENSKAP OCH FYSIOLOGI**



# On cognition and personality in bipolar disorder

**Timea Sparding**

Department of Psychiatry and Neurochemistry, Institute of Neuroscience and Physiology

## **Abstract**

Even though the hallmark of bipolar disorder is recurrent episodes of elevated or depressed mood, mounting evidence suggests that cognitive impairment is a prominent characteristic of bipolar disorder. The heterogeneity and longitudinal trajectory of cognitive functioning are, however, poorly understood. Additionally, certain personality traits may play a role in psychopathological processes along with cognitive impairments.

This thesis is based on six studies. Data were collected within the framework of St. Göran bipolar project, which is a longitudinal study of patients with bipolar disorder. *Study I* examined the clinical relevance of cognitive impairments and examined if cognitive abilities differ between bipolar disorder subtypes and healthy controls. *Study II* examined whether the correlation structure between various cognitive abilities differs between individuals with bipolar disorder and healthy controls. *Study III* examined if cognitive abilities differ between individuals with bipolar disorder with and without attention-deficit hyperactivity disorder (ADHD). *Study IV* examined if long-term changes in cognitive functioning in individuals with bipolar disorder differ from normal aging. *Study V* examined if personality traits differ between individuals with bipolar disorder and healthy controls, as well as the association between personality traits and illness course. *Study VI* examined if the cognition/personality interface is altered in bipolar disorder, and if combining cognitive predictors with personality measures would enhance the understanding of the illness course.

Results showed that cognitive impairments approached clinical significance for substantial minority of the patients on certain cognitive tests measuring, e.g., set shifting and inhibition (I). While the majority of bipolar disorder patients performed on par with healthy controls, a subgroup (30%) showed impairments concerning memory (II). Comorbid ADHD in bipolar disorder could not explain the cognitive heterogeneity in bipolar disorder (III). The cognitive trajectory over a 6-year period did not differ between individuals with bipolar disorder patients and healthy controls (IV). The personality profile differed between patients and healthy controls but had no prognostic value (V). However, differences in personality traits explained some of the variation in cognitive performance in individuals with bipolar disorder (VI).

Keywords: bipolar disorder, cognition, cognitive function, impairment, neuroticism, personality, personality inventory, psychometrics, and multivariate data analysis.