

**THE NETWORK STRUCTURE OF PSYCHOPATHOLOGY ACCORDING TO THE CPRS: NETWORK COMMUNITIES AS ELEMENTARY SYNDROMES OF PSYCHOPATHOLOGY**

R. Goekoop<sup>1</sup>, J.G. Goekoop<sup>2</sup>

<sup>1</sup>Mood Disorders, PsyQ, Den Haag, Netherlands ; <sup>2</sup>Psychiatry, Leiden University Medical Center, Leiden, Netherlands

**INTRODUCTION:**

The vast number of psychopathological syndromes that can be observed in clinical practice can be described in terms of a limited set of elementary syndromes that are differentially expressed. In the past, principal component analysis (PCA) has been used to identify such elementary syndromes (dimensions of psychopathology). Here, we show that elementary syndromes can be defined as modules within a network of interacting symptoms.

**AIM:**

To examine the modular structure of psychopathology using network community detection (NCD) and principal component analysis (PCA) and to define critical areas of the network that could be primary targets for intervention.

**METHODS:**

192 heterogeneous psychiatric patients were tested on the Comprehensive Psychopathological Rating Scale (CPRS). PCA was performed on the bootstrapped correlation matrix of symptom scores to extract the principal component structure (PCS). An undirected and weighted network graph was constructed from the same matrix. Network community was optimized using a previously published technique.

**RESULTS:**

NCD showed an optimal match (93.2%) with a 6-PCS of psychopathology. Some 6 network clusters were found, including 'Depression', 'Mania', 'Psychosis', 'Psychomotor retardation', 'Behavioral disorganization', and 'Somatic anxiety'. The psychopathology network displayed a Small World structure. Nodes with singular network metrics were identified as possible targets for treatment.

**CONCLUSION:**

We present the first comprehensive network graph of psychopathology: a 'Psychopathology Web'. Clusters within this network represent elementary psychiatric syndromes. Individual symptoms with key roles in maintaining network connectivity were identified as possible targets for treatment.

