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Symptom-specific assessment of treatment efficacy: The potential of network estimation techniques

L. Boschloo

Department Of Clinical, Neuro And Developmental Psychology, Vrije Universiteit Amsterdam / Amsterdam Public Health Research Institute, Amsterdam, Netherlands
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Abstract Body: Introduction: Most studies on the efficacy of psychiatric treatments consider overall scale scores as outcome measures. A focus on individual symptoms would, however, result in a more precise assessment of treatment efficacy and has potential in improving our understanding of the working mechanisms of treatment. Such an approach may also help in improving the identification of patients who are -based on their pretreatment symptomatology- the most likely to benefit from a particular treatment.

Objectives: To show the potential of network estimation techniques in a) unraveling the diverse symptom-specific responses to various depression treatments and b) improving the identification of patients who are the most likely to benefit from these treatments.

Methods: First, we combined patient-level data of multiple trials considering various depression treatments, such as antidepressant medication and (internet-based) cognitive-behavioral therapy. Network estimation techniques were used to determine the complex patterns in which symptom-specific responses to treatment were related.

Results: Individual clinical symptoms differed substantially in their responses to treatment and these symptom-specific responses were related in a complex manner. Patients suffering from symptoms that were directly affected by a particular treatment were -by definition- the most likely to benefit from that treatment.

Conclusions: Network estimation techniques were able to unravel the diverse symptom-specific responses to treatment and could help in improving our understanding of the chain of events leading to a clinical response. Information from the networks could also help in improving the identification of patients who were the most likely to benefit from a particular treatment.

Disclosure: No significant relationships.

Psychosocial imaging: Disentangling the interplay between environmental variables and psychotic disorders

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Psychosocial adversity and the developing brain: Findings from the abcd study on 10,000 us childrenS. Frangou¹, A. Modabbernia², G. Doucet² and D. Janiri³

¹Psychiatry, University of British Columbia, Vancouver, Canada;

²Psychiatry, Icahn School of Medicine at Mount Sinai, NEW YORK, United States of America and ³Ageing, Neurosciences, Head-neck And

Orthopaedics Sciences, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Università Cattolica del Sacro Cuore, Rome, Italy

*Corresponding Author.

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Background: Childhood exposure to social risk has the potential to disrupt brain development and increase vulnerability to adverse mental health outcomes. Here, we examine the effect of adversity on brain structure and psychopathology in the Adolescent Brain and Cognitive Development (ABCD) study, a US population-based sample of 10 year-olds.

Methods: Personal, caregiver, family and neighborhood characteristics were considered in 9299 unrelated children [age: mean (sd)=9.9 y (0.6); 53% males]. Hidden Markov Models were used identify clusters of participants based on their psychosocial exposure. The identified clusters were compared in terms of current psychopathology, lifetime psychiatric diagnosis, intelligence and brain structure.

Results: ABCD participants clustered in to a “disadvantaged” group (N=4205) with multiple adverse exposures, and an “enriched” group (N= 5094) with limited exposure to adversity and multiple protective factors. Compared to the enriched group, the disadvantaged group had higher levels of all types of psychopathology and lifetime psychiatric diagnoses; lower scores on fluid and crystallized intelligence; smaller subcortical volumes; thinner sensorimotor cortices and thicker cortex in frontal regions; smaller surface area in temporal regions and larger surface area in the posterior cingulate cortices (all $p < 0.05$ following Bonferroni correction for multiple testing).

Conclusions: Social adversity has significant and wide-ranging consequences for brain development and psychopathology, that shows little specificity for types of symptoms.

Disclosure: No significant relationships.

Keywords: psychopathology; Neuroimaging

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The complexity of vulnerability to psychosis

A. Fiorillo

Department Of Psychiatry, University of Campania “L. Vanvitelli”, Naples, Italy

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Schizophrenia is a complex mental disorder, which has been recently conceptualized as a neurodevelopmental disease. This conceptualization has changed the psychopathological approach to schizophrenia, which is now described as lying on a continuum from mild psychotic experiences to frank psychotic episodes. According to this theory, the presence of psychotic symptoms would represent the final pathway of a complex dysregulation and interaction of different genetic and environmental risk factors. As regards genetic liability, recent genome-wide association studies have identified a total of 108 loci containing common risk alleles, and which meet genome-wide significance. As regards environmental factors, higher rates of schizophrenia have been found in ethnic minority groups, in persons who are heavy cannabis smokers, in those who suffered from severe childhood traumas, in persons who have been reared in highly deprived settings. The identification of risk factors associated with vulnerability to psychosis is essential for improving our understanding and early detection of vulnerable individuals, and to propose tailored and timely interventions for sufferers. There is the need for an interdisciplinary approach to schizophrenia which includes