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

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doi: 10.1192/j.eurpsy.2021.145

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 children

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doi: 10.1192/j.eurpsy.2021.146

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

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doi: 10.1192/j.eurpsy.2021.147

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

screening procedures for individuals reporting specific vulnerabilities and treatment strategies tailored on patients' needs.

Cognitive remediation in schizophrenia: New evidences and future perspectives in the digital era

S0177

Effectiveness of cognitive remediation in schizophrenia: What works and what does not work?

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Introduction: Cognitive function in schizophrenia is one of the main elements related to functional outcomes. Although there is enough evidence that cognitive remediation (CR) is beneficial, there is still a limited understanding of how the active therapy ingredients contribute to brain changes and translate into improved real-world functioning.
Objectives: Identify neurobiological, psychopathological, cognitive, and functional CR response or resistance predictors in schizophrenia, considering both cognitive and functional outcomes.
Results: We still lack a precise understanding of how CR produce its effects with different programs, different numbers of sessions, with and without a therapist. CR exerts its maximal benefit when delivered in the context of psychiatric rehabilitation, but it is not yet clear what are the mechanisms of integrated treatment effectiveness. Only a few studies have looked for the relationship between CR response or resistance and the biological, socio-demographic, clinical and cognitive features in schizophrenia. The current knowledge on efficacy predictors of CR is sparse and include: age, illness duration, premorbid adjustment, baseline cognitive performance, intrinsic motivation, hostility, disorganized symptoms, neurobiological reserve, genetic polymorphisms, antipsychotics amount, the type of CR, etc. All of these limitations may have contributed to the poor implementation of CR in national and international guidelines, as well as in clinical practice.
Conclusions: It is important that future research shift from studies of group efficacy to individual efficacy of treatments, in the perspective of precision medicine. Issues related to individual effectiveness predictors and interactions between specific pharmacologic, specific CR technique and individual patients' characteristics should be further addressed.

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Cognitive remediation in the era of new technologies: Applications and innovations

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Most cognitive remediation therapies now involve computer presentation that differ in their level of sophistication and incorporation of gaming technology. But sophistication doesn't seem to affect the benefits as few outcome differences have been noted. Rather there seems to be a need for some interaction between a therapist and client with two recent meta-analyses reporting this therapist effect. For the large-scale roll-out of cognitive remediation this poses a problem – how do we train these therapists? We know that training or at least educational background is important, so we need clear training packages and supervision. Covid-19 has also given us a greater challenge as it has limited our face-to-face interactions. To remove these two challenges we can use technology. For training we need online processes to increase training availability and for a lack of face to face contact we can provide the bridge with suitable platforms which allow the sharing of screens. Both would ensure that cognitive remediation is available to a wider group, although that requires overcoming the digital divide often experienced by people with a diagnosis of schizophrenia. The tools and the training programme issues are discussed with reference to some initial data.

Symposium with the European Institute for Women's Health: Mental health of women: What can we do to improve it?

JS0001

Mental health and human rights of women

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Introduction: Mental health stigma and discrimination interact with gender inequality and the discrimination of women and girls to their mental health detriment.
Objectives: Present and discuss the challenges and opportunities of a human rights based approach to womens' mental health.
Methods: Non-systematic review of policy and practice of human rights based interventions for womens' mental health.
Results: Current mental health as well as gender equality legislation converge towards the realization of longstanding demands of equality for women as well as for persons with mental health problems: removal of barriers, respect and enablement of autonomy, renewed efforts toward effective inclusion in all spheres of life.