

⁵University of Tehran, Atieh Clinical Neuroscience Center, Tehran, Iran; ⁶University of Messina, Department Of Cognitive Sciences, Messina, Italy; ⁷University of Southern California, Department Of Neuroscience, Los Angeles, United States of America; ⁸Palo Alto University, Department Of Psychology, Palo Alto, United States of America and ⁹Stanford University School of Medicine, Department Of Neurosurgery, Stanford, United States of America

*Corresponding author.

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Introduction: Neuropsychiatric disorders including Generalized Anxiety Disorder (GAD), Obsessive-Compulsive Disorder (OCD), Major Depressive Disorder (MDD), Bipolar Disorder (BD), and Schizophrenia (SZ) have been considered distinct categories of diseases despite their overlapping characteristics and symptomatology.

Objectives: We aimed to provide an in-depth review elucidating the role of glutamate/Glx and white matter (WM) abnormalities from a transdiagnostic perspective.

Methods: The PubMed online database was searched for studies published between 2010 and 2021. After careful screening, 399 studies were included.

Results: The findings point to decreased levels of glutamate in the Anterior Cingulate Cortex in both SZ and BD, whereas Glx is elevated in the Hippocampus in SZ and MDD. With regard to WM abnormalities, the Corpus Callosum and superior Longitudinal Fascicle were the most consistently identified brain regions showing decreased fractional anisotropy (FA) across all the reviewed disorders, except GAD. Additionally, the Uncinate Fasciculus was found to be affected in all the reviewed disorders, except OCD. Decreased FA was also found in the inferior Longitudinal Fasciculus, inferior Fronto-Occipital Fasciculus, Thalamic Radiation, and Corona Radiata in SZ, BD, and MDD. Decreased FA in the Fornix and Corticospinal Tract were found in BD and SZ patients. The Cingulum and Anterior Limb of Internal Capsule exhibited decreased FA in MDD and SZ patients.

Conclusions: The results suggest a gradual increase in severity from GAD to SZ defined by the number of brain regions with WM abnormality which may be partially caused by abnormal glutamate levels. WM damage could thus be considered a potential marker of some of the main neuropsychiatric disorders.

Disclosure: No significant relationships.

Keywords: White matter; Transdiagnostic; Neuropsychiatric Disorders; Glutamate

e-Mental Health 01 / Quality Management

EPP0123

Use of machine learning on clinical questionnaires data to support the diagnostic classification of Attention Deficit Hyperactivity Disorder: a personalized medicine approach

S. Grazioli*, M. Mauri, E. Rosi, F. Villa, F. Tizzoni, A. Tarabloni, S. Trabattoni, V. Mauri, P. Colombo, M. Molteni and M. Nobile
Scientific Institute Eugenio Medea, Associazione La Nostra Famiglia, Developmental Psychopathology Lab, Bosisio Parini (LC), Italy

*Corresponding author.

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Introduction: Attention Deficit / Hyperactivity Disorder (ADHD) is a highly prevalent neurodevelopmental condition characterized by inattention, motor hyperactivity and impulsivity. ADHD cognitive and behavioral presentation is characterized by a high heterogeneity (APA, 2013). Indeed, a complex diagnostic process, that considers several validated tools, is, to date, necessary.

Objectives: The main aim is to develop supervised machine learning (ML) algorithms that could be used to support the diagnostic process for ADHD, by identifying the most relevant features in discriminating between the presence or absence of the ADHD diagnosis in children.

Methods: We analyzed data from 342 children (Mean age: 8y 8m ± 1y; 61 F) referred for possible ADHD symptomatology. Assessments were performed by an expert clinician and through questionnaires: Social Responsiveness Scale (SRS), Child Behavior Checklist (CBCL), Conners Rating Scale for Parents (CPRS) and for Teachers (CTRS). Data were analyzed using a decision tree classifier and random forest algorithms.

Results: The decision tree model performed an accuracy of 0.71. The random forest model that was identified as the best tested, performed an accuracy of 0.77 (Figure 1) and it identified as most informative parent- and teacher-rated DSM-oriented ADHD symptoms (Figure 2).

Confusion Matrix and Statistics

	Reference	
Prediction	ADHD	nonADHD
ADHD	33	9
nonADHD	7	19

Accuracy : 0.7647
95% CI : (0.6462, 0.8591)
No Information Rate : 0.5882
P-Value [Acc > NIR] : 0.001766

Figure 1: Random forest confusion matrix and statistics.

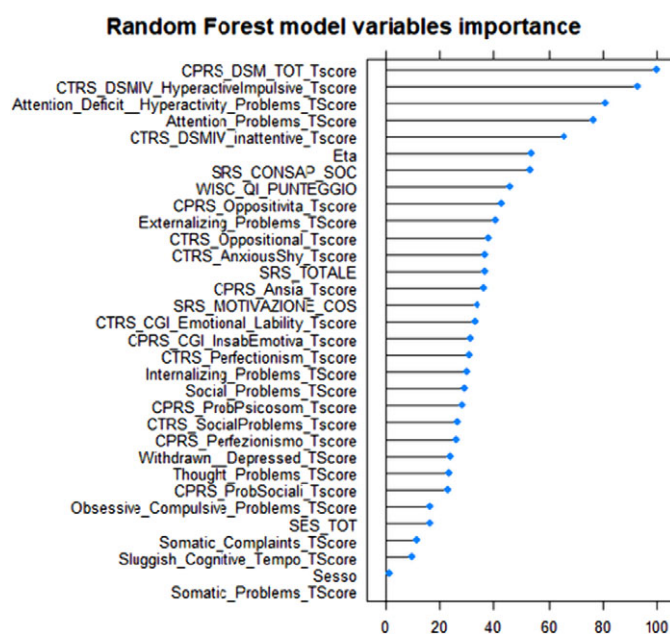


Figure 2: Ranking of variables importance.

Conclusions: A random forest classifier could represent an effective algorithm to support the identification of ADHD children and to simplify the diagnostic process as an initial step. The use of supervised machine learning algorithms could be useful in helping the diagnostic process, highlighting the importance of a personalized medicine approach.

Disclosure: No significant relationships.

Keywords: machine learning; Personalized medicine; Attention Deficit Hyperactivity Disorder; Diagnostic classification

EPP0124

Impact of WPA's Telepsychiatry Global Guidelines on Clinical Practice, International Collaboration, and Education

D. Mucic

Little Prince Treatment Centre, Telepsychiatry, Copenhagen V, Denmark

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Introduction: Telepsychiatry is the best-documented e-Mental Health application. It refers to the use of videoconferencing in the provision of mental health services. During the COVID19 pandemic, in response to physical distancing, mental health services worldwide have turned to online consultations. For the vast majority of clinicians, it was the first time they use telepsychiatry, and very few have received training in how to do it.

Objectives: - to present the main objectives and messages of the WPA Global Guidelines for Telepsychiatry related to competencies & skills, educational & legislative needs, and international collaboration.

Methods: A structured review of the main challenges, innovations, and settings in the first Global Telepsychiatry Guidelines, published by WPA in February 2021.

Results: The benefits of increased access to telehealth services are apparent for telepsychiatry, but benefits can only be realized if the tools are used by clinicians who have the appropriate training and guidance. With proper preparation and thoughtful risk management, telepsychiatry can be an invaluable tool for allowing greater access to care. However, certain prerequisites must be fulfilled to achieve the desired goals. These prerequisites are e.g. choice of the technology, settings, patient/provider preferences as well as competencies and skills described in this document.

Conclusions: The need for training among health care professionals is the highest priority. The urgent need for clinical training and skills building around e-mental health inclusive telepsychiatry, will determine the influence that psychiatry can have in addressing the mental health sequelae of the COVID19 pandemic via competent practice and increased international collaboration.

Disclosure: I am the main author of "WPA Telepsychiatry Global Guidelines"

Keywords: telepsychiatry; collaboration; education; skills and competencies,

EPP0125

What ePROs are telling us about patients with substance use disorder

S. Krasteva*, Z. Apostolov and H. Kozhuharov

Medical University of Varna, Department Of Psychiatry And Medical Psychology, Varna, Bulgaria

*Corresponding author.

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Introduction: Despite the high prevalence of substance use disorders, the majority of affected individuals do not seek any medical help or receive treatment targeting mainly symptoms of intoxication, withdrawal or general medical conditions due to chronic use of psychoactive substances. Patients with substance use disorders are more likely to remain undiagnosed regarding other psychiatric illnesses. Electronic patient-reported outcomes (ePRO) provide an easy-to-use instrument for detailed assessment at low economic cost.

Objectives: To assess patients' attitude towards self-reporting of symptoms related to substance use, mood, anxiety, quality of sleep, medication intake, social performance, and psychotic symptoms.

Methods: Mobile application consisting of seven questionnaires (Mood, Anxiety, Substance Use, Sleep, Medication, Social Activity and Various symptoms) was offered for use to patients with substance use disorder. Enrolled subjects were encouraged to use the app to report their actual condition in accordance with their own willingness and lifestyle.

Results: Throughout the study a total of 1077 completed questionnaires were submitted, of which 193 (17.9%) were on mood, 188 (17.5%) - on substance use, 187 (17.4%) - on sleep, 155 (14.4%) - on anxiety, 139 (12.9%) - on medication intake, 111 (10.3%) - on psychotic symptoms, and 104 (9.7%) - on social performance.

Conclusions: Our research revealed that patients with substance use disorder are likely to share concerns regarding variety of psychiatric symptoms besides these attributed to their primary diagnosis. Implementation of ePROs can be a valuable tool for in-depth assessment and subsequent meeting the needs of such patients.

Disclosure: No significant relationships.

Keywords: electronic patient-reported outcomes; digital psychiatry; substance use disorder

EPP0126

The Management and Supervision Tool (MaST): an electronic crisis risk prediction tool to support safe and effective mental healthcare

R. Patel^{1*}, J. Oram², N. Hebden², Z. Payne², M. Morse² and C. Gadd²

¹King's College London, Academic Psychiatry, London, United Kingdom and ²Holmusk, Europe, London, United Kingdom

*Corresponding author.

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