the cognitive instruments, such voluntary attention, Continuous Performance Test indexes, WCST indexes, Wechsler Intelligence indexes and behavioral scales from CBCL/6-1 and TRF/6-18.
Results: The highlighted results points to WCST index like: "Perseverative answers" and "Perseverative errors" and "learning to learn" joint to "CPT omissions" and behavioral scales as "CBCL ADHD", and "CBCL Problems of Attention" produces accuracy of diagnosis discrimination from 84.7% to 60% in the precision of the decision tree.
Conclusions: The decision tree and machine learning approaches can be effective in directing the screening of typical ADHD complaints.

Disclosure: No significant relationships.
Keywords: ADHD; Behavioral profile; Decision tree; Neuropsychological profile

EPV0461

Optimizing prediction of response to antidepressant medications using machine learning and environmental data

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Introduction: Major depressive disorder (MDD) is complex and multifactorial, posing a major challenge of tailoring the optimal medication for each patient. Current practice for MDD treatment mainly relies on trial-and-error, with estimated 42%-53% response rates for antidepressant use.
Objectives: We sought to generate an accurate predictor of response to a panel of antidepressants and optimize treatment selection using a data-driven approach analyzing combinations of clinical and demographic factors.
Methods: We analyzed the response patterns of patients to five antidepressant medications in the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study and the Pharmacogenomic Research Network Antidepressant Medication Pharmacogenomic Study (PGRN-AMPS), and employed state-of-the-art machine learning (ML) tools to generate a predictive algorithm. To validate our results and confirm the algorithm's external generalizability outside of its training groups, we assessed its capacity to predict individualized antidepressant responses on a separate validation and test sets consisting of 1,021 patients overall from both studies.
Results: The algorithm's ML prediction models achieved an average accuracy of 0.6416 (64.16%, SD 4.4) across the analyzed medications, and a cumulative accuracy of 0.6012 (60.12%), AUC of 0.601, sensitivity of 0.6034 (60.34%) and specificity of 0.599 (59.9%).
Conclusions: These findings support applying ML to accumulating data derived from large studies to achieve a much-needed improvement in the treatment of depression. By an immediate analysis of large amount of combinatorial data at the point of care, such prediction models may support doctors' prescription decisions, potentially allowing them to tailor the right antidepressant medication sooner.

Disclosure: Dekel Taliaz is the founder and CEO of Taliaz and reports stock ownership in Taliaz. Amit Spinrad and Sne Darki-Morag serve as data scientists in Taliaz.
Keywords: Precision psychiatry; Depression; Treatment optimization; machine learning

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Inventory construction to track cognitive profiles compatible with intellectual disability, ADHD, and dyslexia in children between 6 to 11 years old

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Introduction: The most frequent complaints from children referred to psychiatry and psychologist are related to academic and attentional impairments, or developmental delay, which are shared by many conditions.
Objectives: To develop an inventory that evaluates cognitive functions of children between 6 to 11 years old to track cognitive profiles compatible with Intellectual Disability, ADHD, and dyslexia to assist in differential diagnosis.
Methods: In study 1 (identification of the relevant constructs, operational definition, and items development), data were collected from parents of children and professionals who serve this population; articles, verification of screening instruments and identification of cognitive impairments by the DSM-5. In study 2, an analysis of judges with professionals was carried out, as well as a verification of the items' clarity by the target population; In study 3, we looked for evidence of validity and precision indicators with a sample of 272 parents and 178 teachers of 72 children diagnosed with one of the three disorders and 207 that had no suspect of neurodevelopmental disorders.
Results: For the parent version, the four-factor solution was the most appropriate, with the following Scales: Attention, Executive Functions, Intelligence and Oral Language. The final version for parents was composed of 60 items, with excellent internal consistency indices (coefficients> 0.90).
Conclusions: ROC curves expressed good sensitivity and specificity of the scales for each disorder. Future studies have to expand the sample size of children diagnosed with one of the three disorders so that new analyzes can be performed and the results can be generalizable to the population.

Disclosure: No significant relationships.
Keywords: Screening Inventory; ADHD; Dyslexia; intellectual disability

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Corticosteroid induced mania with psychotic symptoms

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