# 10th World Congress on ADHD

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**Abstract texts of accepted poster and oral presentation abstracts**

(published as submitted)

**ECSAS-01-001**

**Working to close the academic achievement gap in young children with ADHD | ID #262**

Abstract Submitter: Jamie Spiegel

Co-Authors: Paulo Graziano

## **Object**:

The Summer Treatment Program for Pre-Kindergarteners (STP-PreK; Graziano et al. 2014) improves academics in children with ADHD (Graziano & Hart, 2016), but retention overtime, and the role of Executive Functions (EF) have not yet been examined. The current study examines a) the academic gap between children with ADHD vs. TD, b) if STP-PreK is successful in narrowing this gap, and c) if EF may allow for improved prediction of treatment response.

## **Method**:

N=286, Mage=5.47, SD=.79; 70% male. The ADHD group (n=134) participated in STP. Performance (Head Toes Knees Shoulders [HTKS]) and parent-report (Behavior Rating Inventory of Executive Function [BRIEF]) measures of EF were collected at baseline. Standardized academic tests (WJ-IV) were administered at baseline, post-treatment (6-mo), and 1-year follow-up (FU). A series of growth curve models were conducted to examine growth in reading and math.

## **Discussion**:

Growth was moderated by the BRIEF and diagnostic status, but not HTKS. Both groups improved in academics from pre-post (TD d's=.44; ADHD d's=.24-.80) and pre-FU (TD d's=1.05-1.07; ADHD d's=.59-1.94). The ADHD vs. TD gap reduced at post and FU, compared to baseline. Children with ADHD and good EF had stronger treatment response at post (d's=.21-.34) and better retention of improvements at FU (d's=.35-.83) compared to children with ADHD and poor EF

## **Conclusion**:

Results highlight how STP-PreK can help in narrowing the academic gap seen for children with vs. without ADHD. Results also indicate that the utility of EF to predict STP-PreK academic treatment response varies by assessment modality (i.e., report- vs. performance-based measures).

## **Do you have any conflicts of interest?**

No

**ECSAS-01-002**

**Emotional dysregulation and suicidal spectrum behaviors in adults with ADHD | ID #274**

Abstract Submitter: Amalie Austgulen

Co-Authors: André Høberg, Astri J. Lundervold, Tor-Arne Hegvik, Jan Haavik

**Object**:

Suicidal spectrum behaviors (SSB) occurs at elevated rates among adults with ADHD, though the pathways leading to these behaviors remain incompletely understood. The goal of this study was to investigate the role of emotional dysregulation in relation to SSB in middle-aged adults with and without ADHD diagnoses.

**Method**:

Participants in the "ADHD in Norwegian adults" project completed the Difficulties in Emotional Regulation Scale (DERS-36), with six subscales, and selected items from the Columbia Suicide Severity Rating Scale (C-SSRS), assessing lifetime presence of suicidal ideation, self-injurious behavior and preparatory acts or behavior toward suicide. Regression models and mediation analyses were constructed, exploring associations between DERS-36 and SSB.

**Discussion**:

In 274 adults with ADHD and 320 controls (mean age 47 years, 61% females), ADHD was significantly associated with lifetime SSB, with the strongest association with suicidal ideation ($\beta = 0.37$, $p < 0.001$). Mediation analyses showed that emotional dysregulation accounted for 43% of the total effect. Limited access to strategies, impulse control difficulties, and difficulties engaging in goal-directed emerged as the strongest mediators ($p < 0.001$).

**Conclusion**:

Our findings demonstrate that emotional dysregulation serves as a crucial link between ADHD and SSB, particularly suicidal ideation. This relationship is primarily driven by difficulties with strategies, impulse control, and goal-directed behavior.

**Do you have any conflicts of interest?**

No

**ECSAS-01-003**

**The impact of increased ADHD prescribing on real-world outcomes: A Swedish self-controlled case series study | ID #101**

Abstract Submitter: Lin Li

Co-Authors: David Coghill, Arvid Sjölander, Honghui Yao, Le Zhang, Ralf Kuja-Halkola, Isabell Brikell, Paul Lichtenstein, Brian M. D'Onofrio, Henrik Larsson, Zheng Chang

**Object**:

Rates of diagnosis of ADHD and prescription of ADHD medications have increased substantially worldwide in recent years. However, it is not known whether the effectiveness of ADHD medication changes as the prevalence of prescriptions rises within a society. We, therefore, conducted a nationwide cohort study of ADHD medication users in Sweden between January 2006 and December 2020.

**Method**:

We analyzed 247,420 ADHD medication users aged 4–64 years (59.8% male) using a self-controlled case series design to compare the incidence rates of self-harm, accidental injury, traffic accidents, and crime during medicated versus non-medicated periods. Conditional Poisson regression was used, with analyses stratified across 2006–2010, 2011–2015, and 2016–2020, reflecting a nearly fivefold rise in ADHD medication use in Sweden, from 0.6% to 2.8%.

**Discussion**:

ADHD medication was consistently associated with reduced risks for self-harm, accidental injury, traffic accidents, and crime. However, the real-world effectiveness of ADHD medication appears to have a significant weakening trend over time for accidental injury (incidence rate ratio [IRR] changed from 0.87 to 0.93), traffic accident (IRR changed from 0.71 to 0.87) and crime (IRR from 0.73 to 0.84), as prescription rates increased.

**Conclusion**:

While ADHD medication is consistently associated with reduced risks of several serious real-world outcomes, the size of these effects appears to have decreased alongside rising prescription rates over time. These trends underscore that the necessity for individualized care approaches to optimize the treatment outcomes and continuous updating of treatment guidelines to account for changing patient populations.

**Do you have any conflicts of interest?**

No

**ECSAS-01-004**

**Striatal proteomics in THRSP-overexpressing mice reveals Snap25 dysregulation, dopaminergic impairments, and methylphenidate response in ADHD-PI | ID #72**

Abstract Submitter: Raly James Custodio

Co-Authors: Leandro Val Sayson, Ara Cho, Hyeryeon Jung, Darlene Mae Ortiz, Hyun Jun Lee, Emad Alyan, Edmund Wascher, Stephan Getzmann, Mikyung Kim Kim, Kyeong-Man Kim

## **Object**:

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder with complex molecular underpinnings, particularly related to striatal synaptic transmission. This study aims to investigate the molecular mechanisms underlying predominantly inattentive ADHD (ADHD-PI) by examining proteomic changes in the striatum of thyroid hormone-responsive protein overexpressing (THRSP-OE) mice, a model of ADHD-PI.

## **Method**:

Proteomic analysis was performed on whole striatal tissues from early adult THRSP-OE mice. Snap25 expression levels were assessed, and dopamine receptor binding affinity and dopamine levels were measured. A seven-day regimen of Methylphenidate (MPH) was administered, and the effects on dopamine levels and EEG theta/beta ratios were analyzed. Statistical analysis assessed protein expression, neurotransmitter, and electroencephalographic changes.

## **Discussion**:

Our findings indicate altered synaptic vesicle dynamics and dopamine dysregulation in the striatum of THRSP-OE mice. The overexpression of Snap25 suggests potential disruptions in the SNARE complex, and reduced dopamine D1 receptor binding and dopamine levels further support dopaminergic impairments. The Improved dopamine levels and EEG theta/beta ratios after MPH administration highlight the therapeutic relevance of these findings for ADHD-PI.

## **Conclusion**:

This study identifies key molecular markers, such as Snap25 dysregulation and dopaminergic impairments, that may contribute to ADHD-PI pathogenesis. The findings emphasize the critical role of striatal synaptic function and dopamine signaling in ADHD and support further exploration of targeted therapies aimed at restoring synaptic and dopaminergic balance.

## **Do you have any conflicts of interest?**

No

**ECSAS-02-001**

**ADHD genetic risk and dementia in older adults: Findings from the alzheimer's disease sequencing project | ID #333**

Abstract Submitter: Douglas Teixeira Leffa

Co-Authors: Livia Amaral, Bruna Bellaver, Guilherme Povala, Pamela Lukasewicz Ferreira, Guilherme Negrini, Luis Augusto Rohde, Brooke Molina, Derek Archer, Tharick Pascoal

## **Object**:

Emerging evidence suggests that attention-deficit/hyperactivity disorder (ADHD) is associated with an increased risk for mild cognitive impairment (MCI) and dementia due to Alzheimer's disease (AD). We tested whether the genetic risk for ADHD, estimated with polygenic risk scores (ADHD-PRS), predicts progression to MCI or AD in a large sample of cognitively unimpaired (CU) older adults across five cohorts from the AD Sequencing Project.

## **Method**:

ADHD-PRS were calculated in 1,970 CU individuals without a clinical diagnosis of ADHD (mean age 71.9 years, 65.9% female). Participants were followed for up to 10 years with clinical and cognitive assessments, including memory, executive function, and language. Cox proportional hazard models were used to test the association between ADHD-PRS and progression to MCI or AD. Linear mixed models evaluated associations with cognitive trajectories.

## **Discussion**:

Higher ADHD-PRS was associated with an increased risk of developing MCI or AD (HR=1.25, 95% CI=1.07-1.45, p-value=0.004). Results remained significant after adjusting for education. Higher ADHD-PRS was associated to lower memory, executive function and language. A significant interaction between ADHD-PRS and time indicated steeper declines in executive function and language in participants with lower ADHD-PRS.

## **Conclusion**:

Results suggest that CU older adults with higher ADHD-PRS are at a greater risk of progressing to MCI or AD and show lower cognitive performance. Surprisingly, greater declined in executive function and language were seen in individuals with lower ADHD-PRS, suggesting a floor effect. These findings align with epidemiological studies linking ADHD to dementia risk, emphasizing the need for further research into underlying mechanisms.

## **Do you have any conflicts of interest?**

No

**ECSAS-02-002**

**Prenatal exposure to medication for ADHD and risk of neurodevelopmental disorders: A multinational cohort study | ID #285**

Abstract Submitter: Claudia Bruno

Co-Authors: Carolyn Cesta, Vidar Hjellvik, Kari Furu, Marte-Helene Bjørk, Øystein Karlstad, Chaitra Srinivas, Mette Nørgaard, Johan Reutfors, Helga Zoega, Jacqueline Cohen

### **Object**:

The objective of this study was to assess whether prenatal exposure to attention deficit/hyperactivity disorder (ADHD) medication increases the risk of neurodevelopmental disorders in children. Method: This population-based cohort study used nationwide register data on all liveborn children from Norway and Sweden (2005-2020). We compared use of ADHD medication in pregnancy, stratified by period of exposure and specific ADHD medication.

### **Method**:

We used propensity score-weighted Cox proportional hazard regression to estimate adjusted hazard ratios (aHR) and confidence intervals (CI) for risk of neurodevelopmental disorders (ICD10: F70-F98). Results: Among 2,384,704 children, 5610 (0.2%) were exposed to ADHD medication prenatally. There was an elevated risk for any disorder when considering exposure to any ADHD medication (aHR 1.2, 95% CI 1.1-1.3) and methylphenidate (aHR 1.2, 1.0-1.3).

### **Discussion**:

However, results were not consistent across secondary analyses with no crude or adjusted risk when restricting to pregnant people with ADHD: aHR 1.0 (0.9-1.2), comparing users in pregnancy with those who discontinued treatment prior to pregnancy: aHR 1.0 (0.9-1.1), and in a sibling analysis: aHR 1.0 (0.8-1.2). Results were consistent across specific disorders, except for tic disorders showing increased risk across several analyses.

### **Conclusion**:

The findings suggest there is little to no increased risk of child neurodevelopmental disorders after prenatal exposure to ADHD medication, aligning with previous research. Elevated risks observed in the overall population were likely due to unmeasured confounding by maternal indication. Our findings strengthen existing evidence and can assist pregnant people and clinicians in weighing the benefits and risks of medication use during pregnancy.

### **Do you have any conflicts of interest?**

No

**ECSAS-02-003**

**Intervention efficacy targeting quality of work life in adults living with ADHD: A randomized controlled trial | ID #221**

Abstract Submitter: Chloe Voyer

Co-Authors: Marc Corbière, Patrizia Villotti, Alina Stamate, Ian Gold, Geneviève Sauvé

## **Object**:

While psychosocial interventions for attention-deficit/hyperactivity disorder (ADHD) exist for children, there is a gap in addressing ADHD symptoms that persist into adulthood, particularly those impacting occupational functioning. The Minds@Work-ADHD study is a randomized control trial to assess the efficacy of a novel workplace intervention aimed at enhancing quality of work life (QWL) in adults with ADHD.

## **Method**:

Eligible participants (N = 20) were randomly assigned to either a control condition or an 8-week manualized online group intervention. Outcome measures included QWL and cognitive functioning at work, assessed at baseline and post-intervention. Preliminary analyses were performed on the first cohort of participants from the larger study (target N = 60).

## **Discussion**:

At baseline, all participants reported severe ADHD symptoms (M = 64.7, SD = 6.8) with no group differences. Repeated measures ANOVA revealed a significant Time effect for cognitive functioning ($F(1, 18) = 10.75$, $p = .004$, $\eta p^2 = 0.371$). While the Group*Time interaction was not significant, intervention participants showed a 5.6% increase in QWL over the study period, versus 0.2% in controls. Updated findings with the full sample will be presented.

## **Conclusion**:

To our knowledge, this is the first randomized control trial examining the effect of an occupational intervention in adults with ADHD. Despite non-significant p-values, the large effect size suggests promising clinical relevance. Manualized group interventions administered virtually may provide a cost-efficient solution to improve cognitive functioning at work in adults living with ADHD.

## **Do you have any conflicts of interest?**

No

**ECSAS-02-004**

**Neurodiversity and financial decision-making: ADHD traits in stock trading | ID #236**

Abstract Submitter: Max Witry

Co-Authors: Marcel Schulze, Markus Kölle, Alexandra Philipsen

**Object**:

This study examines how ADHD-like traits, particularly impulsivity and inattention, relate to financial risk tolerance (FRT) in active traders. We hypothesize that individuals with ADHD traits have higher FRT, resulting in riskier financial decisions and suboptimal outcomes.

**Method**:

An online survey recruited 945 active traders through financial and health platforms. ADHD traits were assessed using the 22-item ADHD Self-Assessment (ADHS SB), and risk tolerance was measured with the 13-item Grable Risk Tolerance Scale. Demographic and trading data, including portfolio performance and transaction frequency, were analyzed using Pearson's correlations, t-tests, and multiple regressions, with a significance threshold of $p<0.05$.

**Discussion**:

Participants with ADHD traits had higher FRT (31.2 vs. 29.4) and speculative risk-taking (11.7 vs. 10.9). ADHD traits correlated with higher FRT ($r = 0.079$) but lower returns ($r = -0.21$). Regression analysis showed trading frequency ($\beta = 0.84$) and speculative behavior ($\beta = 0.634$) as predictors, with returns inversely linked ($\beta = -0.95$). Gender differences revealed that males had higher FRT and better returns, while females had poorer outcomes.

**Conclusion**:

ADHD traits, especially impulsivity and inattention, are linked to higher FRT and speculative trading due to a preference for immediate rewards. However, they also cause inefficient decision-making and lower returns, indicating that decision-making inefficiencies, not risk preference, drive suboptimal outcomes. These findings highlight the need for strategies to reduce impulsivity and promote deliberate financial decisions.

**Do you have any conflicts of interest?**

No

**P-01-001**

**The cerebellum in children and adolescents with ADHD | ID #87**

Abstract Submitter: Oliver Bilke Hentsch

Co-Authors: Ioana Charrua, Roksolana Yurchyshyn, Dennis Schutter

## **Object**:

The human cerebellum accounts for approximately ten percent of total brain volume. Despite its modest size, the cerebellum contains more than half of the total neurons present in the human brain In addition to its established role in motor functions, there is substantial clinical and scientific evidence that the cerebellum is involved in non-motor related processes and neuropsychiatric symptoms such as ADHD.

## **Method**:

A systematic literature search with predefined criteria [**include search terms here?**] was conducted in PubMed, Embase and Cochrane to review the role the cerebellum ADHD. Clinical and neuroscientific studies on social, cognitive, emotional, and motor functions were included. In addition, experts were interviewed in order to integrate current scientific and clinical findings with a focus on the Cerebellar Cognitive Affective Syndrome (CCAS).

## **Discussion**:

Scientific literature in ADHD associated with cerebellar disorders in children and adolescents is growing, but systematic studies remain limited. These disorders are often associated with executive deficits, visuo-spatial disorders, and affective impairments. Further research is needed as recent studies suggest that connectivity disturbances in these networks contribute to cognitive and affective dysfunctions in ADHD and ASS.

## **Conclusion**:

Results indicate that CB abnormalities play a prominent role in common paediatric psychiatric disorders. Closer cooperation between neuropaediatrics, child psychiatry and neuroscientific research is necessary to better understand CB-mechanisms underlying neuropsychiatric symptoms in the developing brain. Functional limitations due to cerebellar pathology should be given greater consideration in diagnosis and treatment.

## **Do you have any conflicts of interest?**

No

**P-01-002**

**ADHD and non-neurological medical comorbidities: A narrative review | ID #349**

Abstract Submitter: Josh Kaplan

**Object**:

ADHD heterogeneity complicates its negative impact, and likely relates to increased comorbidities. Research has emphasized neurological comorbidities, however recent studies have emphasized the importance of identifying biological pathways present in non-neurological comorbidities to clarify etiology. Our objective is to explore associations between ADHD and comorbid non-neurological conditions with a secondary emphasis on shared mechanisms.

**Method**:

We searched academic databases using relevant search terms for studies conducted between 2019 to August 2024. Included studies: 1) were published between 2019 and August 2024, 2) were published in the English language, 3) investigated the association between ADHD and comorbid medical disorders, 4) were quantitative randomized controlled trials, systematic reviews, meta analyses, or cross-sectional studies.

**Discussion**:

Common non-neurological conditions included diabetes, obesity, asthma, sleep apnea, and cardiometabolic disorders. Strength of evidence was limited by: low number of studies and small sample sizes for each condition, heterogeneous measurement tools, and study designs with low scientific rigor. Mechanisms of action or biological pathways were uncommon, but are highlighted as a secondary aim of this review.

**Conclusion**:

There is complex and poorly-understood interplay between ADHD and non-neurological comorbidities, although studies speculate that these conditions share common mechanistic pathways. However, any discussion of this in the literature is largely theoretical. Future studies should quantify and test proposed mechanisms using more rigorous methodology.

**Do you have any conflicts of interest?**

No

**P-01-003**

**The role of current psychosocial stressors and post-trauma symptoms on the association between ADHD symptoms and executive functioning performance | ID #248**

Abstract Submitter: Michael Meinzer

Co-Authors: Logan Tufty, Justyce Harris, Jason Soble

**Object**:

Research has demonstrated an association between ADHD symptoms and poorer executive functioning (EF). However, limited research to date has investigated whether the interaction of ADHD symptoms and psychosocial stressors has a compounding, negative effect on EF. The present study aims to address this gap by determining if psychosocial stressors and/or PTSD symptoms moderate the association between ADHD symptoms and EF performance.

**Method**:

The sample was derived from a database of adult patients referred for ADHD neuropsychological assessment. Participants (N = 328; 62.5% female; 35.4% White, 27.1% Hispanic, 18.3% Black, 12.5% Asian; Mage=29.4 years, SD = 7.6) completed trauma, stress, ADHD symptom, and PTSD symptom questionnaires. Area Deprivation Index (ADI) captured neighborhood disadvantage. A z-score composite of six objective measures of EF was calculated.

**Discussion**:

Though PTSD symptom scores independently predicted EF performance, this association no longer remained significant once ADHD symptoms were included in the model. Conversely, ADHD symptoms significantly predicted EF performance, even after controlling for childhood trauma, perceived stress, PTSD symptoms, and ADI scores. No moderation was detected in the relation between ADHD symptoms and EF performance.

**Conclusion**:

Results indicated that ADHD symptoms are the most robust predictor of objective EF performance among adults referred for neuropsychological evaluation of ADHD, even when controlling for psychosocial stressors and current post-trauma symptoms. Further, the presence of these frequently comorbid experiences/symptoms did not amplify the association between ADHD symptoms and EF performance.

**Do you have any conflicts of interest?**

No

**P-01-004**

**Exploring the microbiota-gut-brain axis in ADHD: Gut microbiome associations and therapeutic insights | ID #147**

Abstract Submitter: Debora Miranda

Co-Authors: Marco Romano-Silva, Marcela França, Antonio Alvim Soares

## **Object**:

Attention-Deficit/Hyperactivity Disorder (ADHD) is the most prevalent neurodevelopmental disorder, significantly affecting daily life and cognitive functions. Emerging evidence suggests a potential link between the gut microbiome (GM) and ADHD symptoms, mediated by the microbiota-gut-brain axis, we aim to understand how it happens.

## **Method**:

This systematic review was registered in PROSPERO and it synthesizes findings from Embase, PubMed, and Scopus. After the procedure, 14 eligible studies were identified.

## **Discussion**:

The results reveal alterations in gut microbial composition, such as an increased Firmicutes/Bacteroidetes ratio, though with variable findings across studies. Significant differences in alpha-diversity remain inconclusive. Mechanistic insights include correlations between GM and inflammatory markers and neurotransmitter pathways. Dietary interventions targeting these pathways show promise in mitigating symptoms.

## **Conclusion**:

Future research integrating genomic, metagenomic, and metabolomic approaches is crucial to unravel the complex mechanisms underlying GM-ADHD interactions and to develop personalized, microbiome-based therapeutic strategies.

## **Do you have any conflicts of interest?**

No

**P-01-005**

**Terrorized minds: Exploring the psychosocial impact of terrorism threats on adults with ADHD | ID #260**

Abstract Submitter: Rachel Shoham

Co-Authors: Haym Dayan

## **Object**:

The 7/10/2023 Hamas massacre left Israel in collective trauma, disrupting daily life and wellbeing. Individuals with Attention Deficit Hyperactivity Disorder (ADHD) often rely on maladaptive coping under stress. This study examines the psychosocial effects of terrorist threats on individuals with ADHD symptoms, their coping styles, and whether ADHD symptoms predict maladaptive strategies for managing stress in the context of terror.

## **Method**:

131 Israelis completed an online questionnaire assessing ADHD symptoms, psychosocial effects of terrorist threats (PETT), coping styles via the Brief COPE, categorized into three subscales: (1) problem-focused (e.g., active coping, instrumental support, planning), (2) emotion-focused (e.g., emotional support, venting, humor, self-blame, religion), and (3) avoidant (e.g., self-distraction, denial, substance use), and socio-demographic data.

## **Discussion**:

ADHD symptoms correlate with PETT ($r = .424^{**}$) and coping strategies like Denial, Substance Use, Behavioral Disengagement, Instrumental Support, Self-Blame, Emotional Support, Religion, and Acceptance ($r = -.279^{**}$). Regression analysis shows ADHD symptoms significantly predict Emotion-Focused Coping ($\beta = 3.752^{*}$) and Avoidant Coping ($\beta = 3.696^{*}$), explaining 37.4% and 41.0% of the variance, respectively, but not Problem-Focused Coping.

## **Conclusion**:

ADHD symptoms are significant vulnerability factors, particularly during prolonged terror attacks. Addressing emotional distress within this population is crucial. Policymakers should prioritize initiatives that enhance resilience, promote awareness of effective coping strategies, and provide tailored support for individuals with ADHD symptoms, enabling them to navigate the unique challenges they encounter in such crises.

## **Do you have any conflicts of interest?**

No

**P-01-006**

**ADHD: From the bottom up | ID #16**

Abstract Submitter: Miguel Vizcaíno da Silva

Co-Authors: Rocio Blanco Fernández, Roberto Fernandez Fernandez, Angela Izquierdo Lapuente, Pablo Del Sol Calderón, Ana Perez Balaguer, Ana Rodriguez Rodriguez, Maria Martin Garcia, Olga Mendez Gonzalez, Rodrigo Albillos Perez, Maria Garcia Moreno

## **Object**:

To explore the potential hereditary and genetic components of Attention-Deficit/Hyperactivity Disorder (ADHD) and its presentation in patients with refractory psychiatric symptoms, through a family case study involving three generations.

## **Method**:

This case study describes a 17-year-old male who presented with symptoms of anxiety and was later diagnosed with ADHD. The patient was treated with extended-release methylphenidate after a cardiological evaluation confirmed its safety. His mother, who had treatment-resistant depression, and maternal grandfather, with severe psychiatric history, also tried the treatment informally and demonstrated significant improvements.

## **Discussion**:

The adolescent reported notable improvements in concentration, academic performance, and emotional regulation, with reduced anxiety symptoms. His mother experienced enhanced mental clarity, focus, and tranquility, while the grandfather showed better emotional self-regulation and mood stability. All subjects responded favorably to psychostimulant treatment, with minimal side effects reported

## **Conclusion**:

This case highlights the need to consider ADHD as a differential diagnosis in patients with refractory psychiatric symptoms and a family history of mental health conditions. It underscores the effectiveness of psychostimulants in improving symptoms across generations, emphasizing the importance of detailed mental health evaluations to uncover underlying conditions and optimize treatment strategies.

## **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Takeda

**P-01-007**

**Common and different gut metagenomic and metabolic profiles linked to diverse ADHD presentations | ID #170**

Abstract Submitter: Xinyue Wang

Co-Authors: Ning Wang, Li Yang

## **Object**:

Previous evidence links gut microbiota to attention-deficit/hyperactivity disorder (ADHD) via the gut-brain axis. However, the specific microbiota contributing to symptoms remain unclear. This study aims to further characterize the gut microbial profile related to different symptoms and explore the mediation mechanism between alterations in microbiota and the core ADHD symptoms.

## **Method**:

We performed shotgun metagenomic sequencing and fecal metabolomics analysis on 94 patients ADHD and 94 controls. Subgroup analyses were conducted based on three ADHD presentations to examine the microbial characteristics. We developed a metabolic model to analyze the relationships between metagenomic and metabolomic data. Additionally, weconducted causal mediation analyses to explore the relationships among microbiota, metabolites and symptoms.

## **Discussion**:

We observed more alterations in combined presentations (ADHD-C). Inattentive presentations (ADHD-I) showed more common microbiota with ADHD-C, while hyperactive-impulsive presentations (ADHD-HI) manifested as distinct subgroup. Metabolic model suggest that gut microbiota on pathogenesis may be mediated through the synthesis of several SCFAs. Imidazoleacetate partially mediated the effects between a candidate strain and inattention ($p=0.012$).

## **Conclusion**:

Our findings suggest different ADHD symptoms were related to common and diverse microbiota and metabolites, with a low-abundance candidate strain contributed to all three core symptoms

while imidazole-acetate specifically mediate the association with inattention symptom. This study provides more insight into the mechanisms underlying metabolic disturbances in ADHD and elucidates the role of gut microbiota in it.

## **Do you have any conflicts of interest?**

No

**P-01-008**

**Toxic stress and ADHD-experiences of child neurologist | ID #187**

Abstract Submitter: Vanja Slijepcevic Saftic

## **Object**:

The effects of adversity  in childhood result in neurobiological changes, which consequently may cause changes to the cytoarchitecture of the brain, and reduce or converge the capacities of child. Exposed to adversity (physical, and emotional abuse, neglect, exposure to violence and/or poverty in the family, and parental mental illness or dependency)  is state known as Toxic stress. It causes neurodevelopmental disorders, and may imitate ADHD.

## **Method**:

The aim of this study was to estimate preliminary results of a multi-disciplinary clinical assessment of patient came to Child and Youth Protection Clinic Zagreb, because of adverse childhood experiences (ACE).

## **Discussion**:

We examined 1694 children with diagnosis of adversity, prospectively 2015-2024. Our multidisciplinary team evaluated their clinical exams, tests, and ACEs (Adverse Childhood Experiences Score).  In case of adversity, symptoms of ADHD “like” variants are significantly more frequent (over 50 %), over 70 % of patients showed dyshrithmic changes in EEG.

## **Conclusion**:

In order to better understand the processes of the effects of toxic stress on the developing brain and identify forms of intervention, we have to apply several levels of study - scientific and theoretical, empirical and professional, but also an integrative paradigm in an approach to neurodevelopmental disorders caused by adversity.

## **Do you have any conflicts of interest?**

No

**P-02-001**

**Genotype-phenotype association analysis of sustained attention in adult ADHD and in at-risk population | ID #438**

Abstract Submitter: Lívia Balogh

Co-Authors: Attila Pulay, Katalin Vincze, Zsófia Hantos-Horváth, Sára Bálint, Tünde Kilencz, Viktória Simon, Zsófia Nemoda, Pál Czobor, István Bitter, János Miklós Réthelyi

## **Object**:

Symptoms of inattention, such as distractibility and difficulty staying focused, are core features of ADHD. Sustained attention is typically assessed using monotonous tests, but it may also be assessed through tests of maintained alertness, selective attention, divided attention, and set shifting. Understanding the genetic background may provide deeper insight into the disorder's characteristics.

## **Method**:

215 aADHD patients and 152 individuals from a population sample who screened positive for aADHD were included. The neuropsychological tests applied were the RAVLT, Stroop, TMT, and CPT. Blood/saliva samples were collected for DNA genotyping, which included COMT Val/Met polymorphism, SCL6A2, the DRD4 exon3 VNTR, and the DAT1 3' VNTR polymorphisms. Dimensional variables were compared between genotypes with the GLM procedure, using PLINK software.

## **Discussion**:

The C allele in rs2242446 was significantly associated with a lower acquisition score in the Rey Memory Task. The A allele of the COMT gene correlated with better alertness in motor tasks but worse performance in set shifting. The DAT1 9-repeat polymorphism was linked to poorer alertness in the ADHD clinical group. The DRD4 7R variant showed a strong association with the severity of DSM-based inattention symptoms.

## **Conclusion**:

Our results support the role of the investigated genetic polymorphisms in the etiology of sustained attention with a heterogeneous inattention profile and underscore the necessity of genetic investigations not only compared to a healthy control group, but also in at-risk populations.

## **Do you have any conflicts of interest?**

No

**P-02-002**

**Genetic overlap between ADHD and migraine | ID #419**

Abstract Submitter: Pau Carabi Gassol

Co-Authors: Marta Ribases, Josep Antoni Ramos-Quiroga, Valeria Macias, Silvia Alemany, Christian Fadeuilhe, Montse Corrales, Vanesa Richarte, Judit Cabana Domínguez, Maria Soler Artigas

## **Object**:

Several studies have reported an increased prevalence of migraine among individuals with attention-deficit/hyperactivity disorder (ADHD) compared to controls, both in adults and children but not in-depth genetic study has been conducted. ADHD and migraine are complex disorders influenced by a combination of genetic and environmental factors. This study aims to explore the genetic overlap of ADHD and migraine using bioinformatic tools.

## **Method**:

Using the largest genome-wide association study (GWAS) meta-analyses on ADHD (Demontis et al. 2023) and migraine (Hautakangas et al. 2022) we conducted: (i) genetic correlation and polygenicity analyses, (ii) cross-trait and functional analyses, (iii) colocalization analysis, (iv) polygenic risk score analyses using and in-house sample of ADHD cases (n=930), and (v) causal inference through Mendelian randomization.

## **Discussion**:

Highlight genes like ABHD17C, a palmitoyl hydrolase a key regulatory for synaptic function; CADM2 associated to impulsivity; and SLC9B1, sodium/hydrogen exchanger previously related to schizophrenia. Consistent with evidence linking mental disorders like depression to migraine, our study also identified a shared genetic background for ADHD and migraine through multiple analytical approaches, providing new insights into their genetic overlap.

## **Conclusion**:

This study confirms a common genetic background between ADHD and migraine, identifies shared genetic variants involved in brain structure, cerebrovascular disorders and inflammatory processes, and highlight relevant candidate genes for further investigation. External validation using additional ADHD samples would be an important further step.

## **Do you have any conflicts of interest?**

No

**P-02-003**

**Monogenic causes and pharmacogenetic therapies in ADHD | ID #358**

Abstract Submitter: Michele Ciliberto

Co-Authors: Clarissa Modafferi, Daniele Segatori, Roberto Brugnoli, Marianna Mazza, Gabriele Sani

## **Object**:

Rare monogenic mutations are emerging as significant contributors in subgroups of ADHD patients. This study examines such mutations, focusing on genes involved in the regulation of dopaminergic (DRD4, SLC6A3), glutamatergic (GRIN2A, SNAP25), noradrenergic (SLC6A2, ADRA2A), and serotonergic (HTR1B, TPH2) neurotransmissions. The potential impact of these genetic variants on targeted pharmacogenetic therapies is also explored.

## **Method**:

A systematic review analyzed genetic association and GWAS studies on pharmacological responses. Specific polymorphisms and mutations linked to treatment outcomes were considered. Meta-regression assessed correlations between genetic variants and therapeutic effects, factoring in age, gender, and comorbidities.

## **Discussion**:

Alterations in SLC6A3 and DRD4 affect dopamine metabolism, key in ADHD symptoms, enhancing methylphenidate and amphetamine efficacy. The C-1291G polymorphism of ADRA2A increases sensitivity to methylphenidate. Variants in GRIN2A and CACNA1C link to severe ADHD and reduced treatment response. SNPs in SNAP25, HTR1B, and TPH2 modulate responses to psychostimulants and atomoxetine.

## **Conclusion**:

Monogenic mutations represent a new frontier for understanding the clinical variability of ADHD and developing personalized therapeutic strategies Integrating pharmacogenetic analyses with GWAS may enhance diagnostic precision and optimize therapeutic approaches

## **Do you have any conflicts of interest?**

No

**P-02-004**

**Higher socioeconomic status uncouples ADHD disease severity from polygenic risk burden in an ADHD population | ID #136**

Abstract Submitter: Carsten Drepper

Co-Authors: Andreas Chiocchetti, Parnian Poursafa, Julia Geißler, Anna Kaiser, Tobias Banaschewski, Marcel Romanos, Escalife Consortium

## **Object**:

ADHD is affecting approximately 5% of the child population and extends into adulthood. It is characterized by inattention, hyperactivity and impulsivity. A combination of genetic and environmental factors are causative. It is known that the socioeconomic status (SES) of affected families influences disease severity. The biological and genetic background of this is elusive and needs further research to uncover consequences for ADHD treatment.

## **Method**:

We investigate genetic factors in a well-phenotyped ADHD study population (participants of ESCAlife, a multi-centered therapeutic trial investigating step-care approaches) ranging from 3-17 years (n=565). We are concentrating on polygenic scores (PGS) to investigate the influence of psychiatric disorder risk alleles and traits in relation to the ADHD disease severity and combine this analysis with the SES data available for the study population.

## **Discussion**:

We found weak correlations between ADHD disease severity and PGS of various psychiatric disorders and traits in the total sample. No significant interaction with the PGS of ADHD was found. However, by taking the SES into account we found that higher ADHD disease severity correlates well with an increased PGS only in the group with the lower SES. In the group with the higher SES no correlation of the disease severity and PGS were found.

## **Conclusion**:

This analysis shows that a higher SES somehow protects patients from showing higher disease severities when they have a higher genetic load. More research is needed to uncover the exact factors driving this phenomenon.

## **Do you have any conflicts of interest?**

No

**P-02-005**

**Cell type-specific methylome-wide association studies of childhood ADHD symptoms | ID #283**

Abstract Submitter: Marieke Klein

Co-Authors: Mandy Meijer, Doretta Caramaschi, Shaunna Clark, Barbara Franke, William Copeland, Karolina Aberg, Edwin Van Den Oord, Pregnancy And Childhood Epigenetics Consortium Pace

**Object**:

Studying DNA methylation (DNAm) can provide insights into gene-regulatory mechanisms underlying attention-deficit/hyperactivity disorder (ADHD). While most DNAm studies were performed in bulk tissue, this study used statistical deconvolution to identify cell type-specific DNAm profiles, from five major blood cell types, associated with childhood ADHD symptoms.

**Method**:

We performed meta-analyses of methylome-wide association studies (MWAS) for ADHD symptoms (4-16 years) in peripheral blood collected during childhood and in cord blood. We included 7 array-based methylation datasets from the Pregnancy And Childhood Epigenetics Consortium (N=2934 peripheral blood; N=2546 cord blood) and a sequencing-based methylation dataset assaying nearly all 28 million CpGs in blood from the Great Smoky Mountain Study (N=583).

**Discussion**:

The meta-analyses, resulted in methylome-wide significant (FDR<0.05) ADHD associations in CD8T cells for peripheral blood, and, in cord blood, in monocytes, CD8T cells, and NK cells. Notably, several significant sites detected in peripheral blood were also detected in cord blood. Furthermore, extended MWAS of all sites available for GSMS detected 69 and 17 additional CpGs in monocytes and granulocytes, respectively.

**Conclusion**:

In this first cell type-specific MWAS for ADHD, we identified DNAm associations for ADHD symptoms; some associations were seen in both peripheral blood and cord blood, indicating cord blood's potential as susceptibility biomarker for increased ADHD risk. These findings show that cell type-specific analyses and sequencing-based approaches can increase insights into the epigenetic patterns associated with ADHD symptoms in childhood.

**Do you have any conflicts of interest?**

No

**P-02-006**

**Investigating genetic variants in the Ras-MAPK pathway in ADHD and ASD using in vivo and in vitro approaches | ID #97**

Abstract Submitter: Anna Koutská

Co-Authors: Anna Vapenikova, Petra Havlickova, Tereza Konikova, Ivana Kuta-Smatanova, Michaela Fenckova

## **Object**:

Attention Deficit Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD) are highly prevalent neurodevelopmental disorders (NDD), with ~30–80% of individuals with ASD also meeting ADHD criteria. The Ras-MAPK signalling pathway, crucial for cell growth and survival, is implicated in both disorders. This study investigates the impact of patient-specific genetic variants in Ras-MAPK pathway genes on cognitive and molecular function.

## **Method**:

We use in vivo and in vitro models to study Ras-MAPK genetic variants. In vivo, Drosophila melanogaster is used for its genetic simplicity and conserved pathways. CRISPR/Cas9 introduces patient-specific variants into Drosophila orthologs, and cognitive effects are assessed using habituation assays, a form of non-associative learning. In vitro, recombinant proteins are expressed to analyse the biochemical and structural impact of these variants.

## **Discussion**:

Our high-throughput habituation assay identifies cognitive deficits caused by Ras-MAPK variants, relevant to ADHD and ASD. Habituation, a conserved form of learning essential for higher cognitive function, is disrupted in these disorders. In vitro protein studies complement these findings by showing how specific variants affect molecular function, linking genetics to cognitive impairment.

## **Conclusion**:

Genetic variants in Ras-MAPK pathway genes disrupt cognitive functions in ADHD and ASD. By combining Drosophila-based in vivo models with in vitro molecular analyses, we provide a platform to study the genetic mechanisms of NDD. This approach enhances understanding of shared pathology in these conditions, dysfunctional molecular mechanisms and identification of suitable treatment targets.

## **Do you have any conflicts of interest?**

No

**P-02-007**

**Exploring copy number variants in a cohort of children affected by ADHD: Genetic insights and clinical perspectives | ID #186**

Abstract Submitter: Federica Mirabella

Co-Authors: Valentina Finocchiaro, Mariagrazia Figura, Ornella Galesi, Maurizio Elia, Rita Barone, Renata Rizzo

**Object**:

Attention Deficit Hyperactivity Disorder (ADHD) is a common neurodevelopmental disorder often associated with other neuropsychiatric abnormalities. Numerous studies identified Copy Number Variations (CNVs) that may increase ADHD susceptibility by affecting genes involved in brain development, particularly in areas related to attention and impulse control. This study examines the impact of CNVs in ADHD patients.

**Method**:

We enrolled a cohort of 152 well-characterized ADHD patients and evaluated the frequency of pathological anomalies such as dysmorphic features, brain MRI findings, EEG alterations, comorbid conditions, and cognitive functioning. We used array-CGH technology to detect CNVs and classified patients into three groups: causative CNVs (C-CNVs), non-causative CNVs (NC-CNVs), and those without CNVs (W-CNVs).

**Discussion**:

We identified CNVs in 81 participants (13 C-CNVs and 68 with NC-CNVs). Statistically significant differences among groups have been detected on CPRS-R:S Oppositional subscale ($p = 0.011$) and CPRS-R:S Inattention subscale ($p = 0.001$), brain MRI anomalies ($p = 0.0012$) and developmental language disorder ($p = 0.0298$), with the latter more prevalent in the C-CNV group.

**Conclusion**:

Several genes identified in the CNV analysis are linked to neurodevelopmental disorders, including ADHD, supporting their role in ADHD pathogenesis. Further research is needed to elucidate the genetic profile and mechanisms by which genetic risk variants contribute to ADHD pathogenesis, with the goal of identifying new therapeutic targets.

**Do you have any conflicts of interest?**

No

**P-02-008**

**Multi-polygenic scores for externalizing behavior among schoolchildren | ID #418**

Abstract Submitter: Uxue Zubizarreta

Co-Authors: María Soler Artigas, Rosa Bosch, Judit Cabana Domínguez, Natalia Llonga, Josep Antoni Ramos Quiroga, Mireia Pagerols, Miquel Casas, Silvia Alemany, Marta Ribasés

### **Object**:

We aimed to improve the phenotypic variance of externalizing behaviour in children explained by multiple polygenic scores (multi-PGS) for known risk factors and mental health-related phenotypes in 4,485 schoolchildren.

### **Method**:

Externalizing behavior was assessed using the CBCL and PGS were constructed using the PRScs. We tested two models and compared the proportion of variance that they explained: (i) a single model with PGSexternalizing and (ii) a multi-PGS model combining PGSexternalizing with multiple PGS for risk factors grouped in six categories: environment, mental-health, cognition, personality, health-risk behavior and non-mental diseases.

### **Discussion**:

Multi-PGS of environment, mental-health, cognition and health-risk behavior increased the phenotypic variance of externalizing behaviour over the single model with PGSexternalizing alone. In addition to PGSexternalizing, the genetic liability of household income, ADHD, educational attainment, intelligence quotation, alcohol intake, number of sexual partners, smoking cessation and risk tolerance significantly contribute to externalizing behavior.

### **Conclusion**:

These results further confirm the benefits of multi-PGS methods to increase variance explained and the potential of classifying PGS into different domains to provide meaningful and interpretable insights into the specific risk factors that may be particularly relevant for predicting externalizing behavior.

### **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

JARQ was on the speakers' bureau and/or acted as consultant for Biogen, Idorsia, Janssen-Cilag, Novartis, Takeda, Bial, Sincrolab, Neuraxpharm, Novartis, BMS, Medice, Rubió, Uriach, Technofarma and Raffo in the last 3 years. He also received travel awards

**P-03-001**

**Co-occurrence of sleep disorders with adult ADHD: Comparison with normal controls | ID #405**

Abstract Submitter: Dimitrios Adamis

Co-Authors: Jake Tiernan, Natasha Lagan, Blánaid Gavin, Fiona Mcnicholas

**Object**:

Sleep disorders are common in adult ADHD, but not thoroughly investigated yet, in contrast to children and adolescents. The aims of the present study are: a) To estimate the co-existence of ADHD with sleep disorders b) to explore their relationship with ADHD predominant presentations (subtypes) and c) to compared the rates of sleep disorders with normal controls.

**Method**:

Consecutive patients with Adult ADHD. Scales:Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality and the Sleep Disorders Symptoms Checklist 17 (SDSC17) which screens for 6 sleep disorders: insomnia, obstructive sleep apnoea (OSA), restless legs syndrome (RLS), circadian rhythm, narcolepsy, and parasomnias. Controls (n=60) were assessed with WURS, ASRS, and GHQ12, to excluded potential ADHD or other mental disorders.

**Discussion**:

Cases with had higher number of sleep disorders compared to controls and significantly higher numbers of individuals with bad quality of sleep, insomnia, abnormalities in circadian rhythm (more likely evening type), OSA, RLS, and parasomnias. Those with predominantly combined presentation were significantly more likely to have, RLS ($x2=12.154$, $p<.0001$, and parasomnias ($x2= 5.685$, $p=. 017$) compared to inattentive presentation.

**Conclusion**:

Adults with ADHD have more often sleep disorders than general population. Systematic screening for them can contribute to a better understanding of their complaints and better treatment. The effects of ADHD medications in sleep disorders needs to be evaluated in follow-up study.

**Do you have any conflicts of interest?**

No

**P-03-002**

**Screen time usage patterns and associated factors among children with ADHD: A cross sectional analysis of multi device exposure and parental regulation | ID #36**

Abstract Submitter: Ahmed Al Ansari


## **Object**:

The proliferation of screen-based devices has transformed children's daily activities, necessitating comprehensive understanding of usage patterns and regulatory approaches. This cross-sectional study investigated screen time exposure across multiple devices, parental regulation methods, and associated demographic factors among children

## **Method**:

Data was collected from 82 children with ASD (73 males, 9 females) across three age groups (5-8, 9-12, >13 years). Screen time was assessed across four device categories (television, tablets, mobile phones, video games) using a 5-point intensity scale. Parental regulation strategies, demographic factors, and symptom manifestation were analyzed

## **Discussion**:

Age distribution analysis revealed 41% (n=34) were aged 5-8 years, 37% (n=30) aged 9-12 years, and 22% (n=18) above 13 years. Prevalence showed television as the dominant medium (80% adoption rate), followed by mobile phones (65%), tablets (46%), and video games (45%). Intensity of usage varied significantly across devices.

## **Conclusion**:

This study reveals distinct patterns in multi-device screen exposure among children, with television and mobile phones emerging as predominant screen-based activities. The notable variation in parental regulation strategies (49% structured vs. 35% unregulated) suggests a critical need for standardized guidelines


## **Do you have any conflicts of interest?**

No

**P-03-003**

**Increased risk of provisional premenstrual dysphoric disorder (PMDD) symptoms among females with ADHD | ID #142**

Abstract Submitter: Thomas Broughton

Co-Authors: Ellen Lambert, Jessica Agnew-Blais

**Object**:

We aimed to understand whether females with a clinical diagnosis of ADHD are more likely to experience PMDD than females without an ADHD diagnosis. We also investigated rates of PMDD among females with a diagnosis of depression or anxiety, with and without ADHD, to assess specificity of PMDD risk. Because ADHD tends to be underdiagnosed among women, we also examined associations using an ADHD symptom scale and PMDD.

**Method**:

Participants in this study, who were residents in the UK aged between 18-34 years and were assigned female at birth, were recruited online (N=720). ADHD symptoms were assessed via the Adult ADHD Rating Scale. PMDD provisional diagnosis and symptoms were assessed via the Premenstrual Symptoms Screening Tool. We used regressions to compare females with ADHD, other mental health conditions, and control groups on PMDD symptoms and diagnosis.

**Discussion**:

The prevalence of PMDD was elevated among individuals who endorsed a clinical ADHD diagnosis (31.4%) compared to those who did not (18.4%). The prevalence of PMDD among participants meeting the DSM-5 symptom cut-off for ADHD was also elevated (40.7%) compared to those who did not (10.4%). An increase of one ADHD symptom on the ASRS was associated with 1.22 times the risk of provisional PMDD [95%CI: 1.17, 1.27, $p<0.01$].

**Conclusion**:

Clinicians should be aware that females of reproductive age with a diagnosis of ADHD, or high level of symptoms, may be more likely to experience PMDD. Future research should investigate the underlying mechanisms that link ADHD and disorders associated with hormonal sensitivity, like PMDD.

**Do you have any conflicts of interest?**

No

**P-03-004**

**Racial/Ethnic disparities in diagnosis of ADHD and comorbid disorders | ID #388**

Abstract Submitter: Jennifer Crosbie

Co-Authors: Sabah Shaikh, Andrew Dissanayake, Annie Dupuis, Paul Peter, Amy Gajaria, Paul Arnold, Christie L. Burton, Russell Schachar

## **Object**:

Objective: Racial/ethnic disparities exist for diagnoses of psychiatric disorders including ADHD and its comorbid conditions. We have shown that some race/ethnicity groups compared to White children and youth have fewer reported diagnosis of ADHD as well as OCD and Anxiety even in the presence of high traits for these diagnoses. We have expanded on these analyses by including a broader range of races/ethnicities and psychiatric disorders.

## **Method**:

Method: Spit for Science sample ages 6-17 (n=17, 271) with diagnoses and traits for ADHD, OCD, depression, autism, depression and anxiety. Groups included White (n=6565), East Asian (n=3373), South Asian (n=2234), LatinX (n=363), Black (n=280), Middle Eastern (n=626) and Mixed (n=3783). We used regression to test for differences in traits and diagnosis between groups compared to White counterparts after accounting for psychiatric trait levels.

## **Discussion**:

Result: White participants, all other race/ethnicity groups had higher trait scores for ADHD and comorbid disorders (autism, depression and anxiety) except OCD. For diagnosis, compared to White participants, rates of diagnosis of ADHD was reduced for East Asian (OR=.34), South Asian (OR=.22), Middle Eastern (OR=.34) and LatinX participants (OR=.36; all p-values < 0.001). Similar results were reported for other ADHD comorbid disorders.

## **Conclusion**:

Conclusion: These results demonstrate that children and youth of various race/ethnicity groups are not receiving diagnoses for ADHD or associated comorbid mental health conditions despite reporting high levels of symptoms for these disorders. This disparity may be due to increased barriers for ethnically diverse youth to access mental health care. Efforts to understand and mitigate these barriers are needed.

## **Do you have any conflicts of interest?**

No

None

**P-03-005**

**ADHD and cardiometabolic risk factors in adult type 2 diabetes: Baseline and longitudinal changes | ID #273**

Abstract Submitter: Zihan Dong

Co-Authors: Ebba Du Rietz

### **Object**:

To investigate the relationship between ADHD and cardiometabolic risk factors at type 2 diabetes (T2D) diagnosis, along with their longitudinal changes after T2D diagnosis.

### **Method**:

This cohort study used Swedish registers to identify adults with T2D (1996–2020). ADHD was defined by diagnosis or medication dispensation. Cardiometabolic risk profile (9 clinical parameters and 2 behavioural factors) was measured at T2D diagnosis and tracked for 5 years. Linear and Poisson regression compared risk factors at diagnosis, and generalized estimating equations assessed changes in clinical parameters over time.

### **Discussion**:

Among 188,829 individuals with T2D (median age: 56 years, 61.0% male), 3,210 (1.7%) had ADHD. Compared to non-ADHD, individuals with ADHD had higher BMI (βADHD: 1.93 [95%CI: 1.54, 2.32]), triglycerides (βADHD: 0.31 [95%CI: 0.17, 0.45]), and were more often smokers (RR: 1.58 [95%CI: 1.44, 1.74]) at T2D diagnosis. Over five years, ADHD was linked to greater BMI reduction (βADHD*t:-0.26 [95%CI: -0.34, -0.17]), even after covariates adjustment.

### **Conclusion**:

Individuals with comorbid T2D and ADHD show higher BMI, triglycerides, and smoking prevalence at T2D diagnosis, but also a greater reduction in post-diagnosis BMI, compared to those without ADHD. If replicated, clinicians should recognize these different cardiometabolic risk factors in patients with T2D and ADHD to facilitate early intervention and personalized management strategies.

### **Do you have any conflicts of interest?**

No

**P-03-006**

**ADHD and comorbidities in childhood: Characterization, treatment and academic challenges | ID #468**

Abstract Submitter: Marta Ezequiel

Co-Authors: Raquel Branco, Rita Ribeiro Martins, Joana Carreira, Joana Matias, Ana Margarida Queiroz, Lurdes Ventosa, Luisa Rocha

**Object**:

This study aimed

to characterize the demographic, clinical and therapeutic profiles of children with ADHD and neurodevelopmental co-diagnosis, and attempts to identify factors associated with disease control and functional outcomes.

**Method**:

Retrospective observational study of children with ADHD who began follow-up in developmental consultation (from January 2021 to December 2022). Clinical progression was assessed from the first consultation to the present. Data was analyzed in Microsoft Excel®.

**Discussion**:

211 children diagnosed with ADHD, 71% (n=150) had a co-diagnosis with other developmental disorders. The other most common diagnosis included specific learning disorders (43%), language disorders (26%), intellectual developmental disorder (23%), oppositional defiant disorder

(17%) and ASD (13%). 47% of children had more than one neurodevelopmental disorder. 79% were on medication, mainly methylphenidate (65%). 61% received special education.

**Conclusion**:

This study highlights the high prevalence of neurodevelopmental co-diagnosis in children with ADHD, with specific learning disorders being the most common. Despite a significant proportion receiving medical, psychological and educational support, academic challenges remain prevalent. Further multicenter studies are needed to evaluate different clinical approaches and improve outcomes for these patients.

**Do you have any conflicts of interest?**

No

**P-03-007**

**An observational study on adults with ADHD in Italy | ID #113**

Abstract Submitter: Ilaria Gervasini

Co-Authors: Silvia Montanari, Sara Beomonte Zobel, Vito Pinzone, Valentina Maria Piras, Daniele Segatori

## **Object**:

ADHD in adulthood is an under-recognized condition, and little is known about the experiences and characteristics of adults with this diagnosis in Italy. This study aims to provide a detailed overview of the clinical and demographic profiles of adults with ADHD and their experiences regarding information-seeking, diagnosis, and treatment.

## **Method**:

This observational study collected data from adults with ADHD across Italy through a structured survey. The survey explored epidemiological and demographic characteristics, as well as participants' pathways to diagnosis and treatment, including the challenges faced in accessing services and information.

## **Discussion**:

The study provides a comprehensive picture of the experiences and characteristics of adults with ADHD in the Italian context. The data highlight the diversity of patient journeys, with a focus on the barriers and facilitators encountered in the diagnostic and therapeutic process.

## **Conclusion**:

This study offers valuable insights into the current situation of adults with ADHD in Italy, providing a descriptive foundation for understanding their needs and the challenges they face. The findings can inform future initiatives aimed at improving awareness, diagnosis, and care for this population.

## **Do you have any conflicts of interest?**

No

**P-03-008**

**Prevalence of ADHD diagnosis in adults: A CPT database perspective | ID #487**

Abstract Submitter: Sam Goldstein

**No Abstract text available**

**P-03-009**

**Exploring quality of life improvements in older adults with ADHD: A retrospective cohort study | ID #375**

Abstract Submitter: Maria Loureiro

Co-Authors: Sarah Carty, Keith Walker

### **Object**:

The presentation of Attention-Deficit/Hyperactivity Disorder (ADHD) in older adults, especially those aged 60 and older, is a growing area of interest due to increasing assessments and treatments for ADHD in this demographic. However, research on ADHD in older adults, particularly regarding its impact on quality of life, remains limited.

### **Method**:

This retrospective cohort study analysed medical records of patients aged 60+ from the past 12 months. Demographic data (age, gender, age at diagnosis) were recorded, along with psychiatric comorbidities, ADHD treatment plans, and medication use. Quality of life changes were assessed using the CADDRA scale (range: -3 to +3). Statistical analysis were performed as appropriate.

### **Discussion**:

The cohort consisted of 34 patients (mean age = 65.5, range 60–78), predominantly female (59%). Of the participants, 47% were on ADHD medication. Among those not on medication, 28% reported satisfaction, improved self-understanding, and relief post-diagnosis. Males on medication showed significantly higher perceived improvement in quality of life (mean score 2.37 vs. 1.75). Depression was the most common comorbidity (26%).

### **Conclusion**:

While treatment decisions for older adults diagnosed with ADHD are highly individualised, this cohort study suggests significant improvements in perceived quality of life among those receiving treatment. Gender differences were observed, with male patients exhibiting higher scores. Despite limitations, particularly the small sample size, the study serves as a pilot for future research and interventions.

### **Do you have any conflicts of interest?**

No

**P-03-010**

**Association between maternal diabetes during pregnancy and neurodevelopmental outcomes in offspring: Results from individual participant data meta-analysis in ten birth cohorts | ID #478**

Abstract Submitter: Rae-Chi Huang

Co-Authors: Rachelle Ann Pretorius, Demetris Avraam, Monica Guxens, Jordi Julvez, Jennifer Harris, Johanna Thorbjornsrud Nader

**Object**:

Growing evidence indicates a dysregulated intrauterine metabolic environment can affect the offspring neurodevelopment.

The object of the study was to investigate the association between gestational diabetes mellitus (GDM) and neurodevelopmental outcomes (symptoms of Attention deficit hyperactivity disorder, Autism spectrum disorder, externalising and internalising problems) in offspring.

**Method**:

Data from >200 000 mother child pairs harmonised by European Child Cohort protocols across ten birth cohorts in Europe and Australia were included for analysis. Using two stage individual participant data (IPD) meta-analysis confounder adjusted regression models were used to estimate the association between GDM and cognitive and behavioural outcomes.

**Discussion**:

Children aged 7-10 years born to mothers with GDM had higher Attention Deficit Hyperactivity Disorder symptoms compare to non-exposed controls (Beta 3.67 (95% CI 1.13 to 6.20, p=0.001). No association was present between GDM and Autism Spectrum Disorder symptoms. Children aged 4-6 years old born to mother with GDM exhibited more externalising problems than those born to mothers without GDM (Beta 2.77 (95% CI 0.52 to 5.02, p=0.01).

**Conclusion**:

Overall this large scale international multi-cohort study demonstrates that a dysregulated intrauterine environment in the form of a GDM may contribute to ADHD and externalising problems in offspring with less evidence that it does so for Autism Spectrum Disorder symptomatology.

**Do you have any conflicts of interest?**

No

none

**P-03-011**

**In utero exposure to ADHD medication and growth trajectories in the offspring from birth to 15 years: A Danish population-based cohort study | ID #229**

Abstract Submitter: Amalie Jensen

Co-Authors: Katrine Marcussen, Sören Möller, Kathrine Madsen

### **Object**:

Concerns have been raised as to whether children exposed to ADHD medication in utero exhibit a suppressed growth trajectory. The aim of this study was to evaluate the association between in utero exposure to ADHD medication and growth trajectories of children from birth to 15 years.

### **Method**:

This cohort study used Danish nationwide registers to identify liveborn singletons. Exposure was defined as filling at least one ADHD medication prescription from 30 days before conception to delivery. A natural cubic spline multilevel model assessed children's height and weight from birth to age 15, comparing those exposed in utero to those whose mothers discontinued medication before pregnancy. Sensitivity analyses addressed potential biases.

### **Discussion**:

We included 5,462 children born between 1998 and 2021 with 49,056 repeated height and weight measurements (median: 5 per child, IQR: 3–8). We compared 2,383 children exposed to ADHD medication in utero to 3,079 whose mothers' discontinued medication before pregnancy. When stratified on gender, no significant differences were found in girls. For boys, weight increased by 1.325 kg, and height decreased by 1.76 cm at ages >11–15 years.

### **Conclusion**:

The differences in boys' weight and height trajectories might reflect prenatal programming due to sex-specific sensitivity to maternal nutrition changes from appetite-reducing effects of ADHD medication. These findings emphasize the importance of guiding women's nutrition during pregnancy while using ADHD medication to support optimal fetal growth and development.

### **Do you have any conflicts of interest?**

No

**P-03-012**

**Do fathers with ADHD have an increased risk of perinatal loss and adverse perinatal outcomes? A population-based study | ID #343**

Abstract Submitter: Ammal Khan

Co-Authors: Anders Engeland, Berit Skretting Solberg, Isabell Brikell, Kari Klungsøyr

**Object**:

Based on the Paternal Origins of Health and Disease paradigm, interest in paternal preconception health and offspring perinatal outcomes is increasing. Studies link paternal cardiometabolic diseases (CMD) to higher risk of adverse perinatal outcomes, and men with ADHD have a higher risk of comorbid CMD. We therefore evaluated the risk of perinatal loss, growth restriction and major birth defects in births to fathers with and without ADHD.

**Method**:

Using data from Norway's nationwide registries, we identified 679,274 singleton births during 2004-2020, where 14,242 (2.1%) were to fathers with ADHD. Relative risks (RR) and 95% confidence intervals (CI) were calculated using log linear regression models, adjusting for year of birth, maternal and paternal age, paternal education, maternal smoking during pregnancy, and clustering on father's ID to account for correlated data among siblings.

**Discussion**:

In adjusted models there was no significant increased risk of stillbirth, perinatal or neonatal mortality or being small for gestational age in births to fathers with ADHD compared to those without. An increase in major birth defects (RR: 1.14, 95% CI: 1.02-1.27) was observed in births to fathers with ADHD, however we could not include terminations of pregnancy due to fetal anomaly (TOPFA), limiting conclusions on the total risk of birth defects.

**Conclusion**:

Although adult ADHD is associated with cardiometabolic diseases, no significant differences in perinatal loss or growth restriction were found in births to fathers with ADHD compared to fathers without. The slightly increased risk of major birth defects requires further investigation, where TOPFA should be included. Both genetic and epigenetic factors could be relevant causal factors for an increased risk.

**Do you have any conflicts of interest?**

No

**P-03-013**

**Socioeconomic and regional variations in ADHD medication prescribing in England | ID #11**

Abstract Submitter: Muhammad Umair Khan

Co-Authors: Syed Shahzad Hasan

**Object**:

This study examines prescribing patterns of ADHD medications in primary care in England from April 2019 to March 2024, focusing on their association with socioeconomic variables and regional prescribing variations.

**Method**:

An observational study was conducted using NHS prescription data from OpenPrescribing, provided by the NHS Business Service Authority. Trends in five licensed ADHD medications were analysed at national, regional, and integrated care board (ICB) levels across England using linear regression. The association between socioeconomic factors and prescription rates was explored using a generalised additive model (GAM).

**Discussion**:

ADHD prescriptions increased from 25.2 items/1000 in 2019/20 to 41.6 in 2023/24 (18% annual increase, $p<0.05$). Methylphenidate remained the most prescribed, with lisdexamfetamine (55%) and dexamfetamine (50%) showing the largest increases ($p<0.05$). Regional increases in prescription rates ranged from 13% in the North-East to 28% in London. Changes ranged from 4.6% to 51.4% in ICBs. GAM model showed significant socioeconomic associations ($p<0.05$).

**Conclusion**:

ADHD medication prescriptions in England increased significantly from 2019/20 to 2023/24, with notable regional and socioeconomic disparities. These findings highlight the need for tailored ADHD services and resource allocation across regions and ICBs in England.

**Do you have any conflicts of interest?**

No

**P-03-014**

**The role of environmental and behavioral factors in early life associated with screening positive for ADHD at 8 years of age: A longitudinal study in The Norwegian Mother, Father and Child Study | ID #291**

Abstract Submitter: André Høberg

Co-Authors: Raymond Walters, Jan Haavik, Tetyana Zayats

## **Object**:

The development of ADHD is known to be associated with genetic and environmental determinants, such as ante- and perinatal (AP) factors as well as sociodemographic (SD) factors, all of which could serve as useful indicators of ADHD. The goal of this study was to investigate the utility of SD and AP factors in identification of children at risk of developing ADHD in early childhood, taking their genetic predisposition to the disorder into account.

## **Method**:

The data of children from the Norwegian Mother, Father, and Child Cohort (N:73,312) were examined in 16 hierarchical logistic regression models, where the outcome was an ADHD screener (positive/negative) at 8 years of age and different combinations of SD/AP factors, ADHD polygenic score (PGSADHD), and ADHD scores at 1.5, 3, and 5 years of age were the explanatory variables. Models were compared by Likelihood Ratio tests and Area Under the Curve.

## **Discussion**:

The SD/AP factors contributed significant independent information to screening positive for ADHD at every age. These contributions weakened as children grew older, with the contribution of AP factors becoming non-significant at 3 to 5 years of age. The contribution of behavioral ADHD scores, on the other hand, proved to be significant and consistent at all ages. These observations remained significant after PGSADHD was included in the models.

## **Conclusion**:

Our findings suggest that consideration of early life behavior and sociodemographic environment can aid the identification of children at risk for developing ADHD early in life, independently of their genetic predisposition to the disorder.

## **Do you have any conflicts of interest?**

No

**P-03-015**

**Prevalence of autism spectrum disorder in young people attending ADMiRE, Ireland's first specialist paediatric ADHD service | ID #160**

Abstract Submitter: Jane McGrath

Co-Authors: Sinead Killeen, Matthew Shipsey, Sarah Sexton, Barbara Cawley, Sarah Watters, Sharon Ryan, Jacqueline Behan, Nikita Tims, Margaret Grace

## **Object**:

There is a high prevalence of autism spectrum disorder (ASD) in young people (YP) diagnosed with ADHD. Previous studies estimate 33-43% comorbidity. Co-occurrence leads to greater morbidity and a more complicated clinical challenge. ASD services are required for this cohort, however are very limited in Ireland. The study aim was to investigate the overall prevalence of 1)formally diagnosed and 2)suspected ASD in YP attending ADMiRE over 3 years.

## **Method**:

All young people who attended ADMiRE for initial assessment between January 2022 and end-December 2024 were identified. A retrospective file review was completed. Data collection included: 1/ Whether the young person had a formal diagnosis of ASD, 2/ Parent & Teacher-rated Social Responsiveness Scale T-score, 3/ Parent-rated Social Communication Questionnaire (SCQ) score, 4/ Documented clinical suspicion of ASD following assessment.

## **Discussion**:

Over 36 months, 369 YP attended ADMiRE for an intake ADHD assessment. Between 2022-2024, 19% (n=71) had existing formal diagnoses of ASD at initial assessment. Of those who had no prior ASD diagnosis, 18% (n=50) had a parent SRS score in the severe range plus an additional clinician suspicion of undiagnosed ASD. Overall, 33% (n=121) either had a formal diagnosis of ASD or suspected (undiagnosed) ASD following initial ADHD assessment in ADMiRE.

## **Conclusion**:

Previous international studies, including a cross-sectional study in ADMiRE have identified a high prevalence of ASD in YP with ADHD. There is currently no defined pathway for ASD assessment in the public healthcare system in Ireland. This is urgently needed in order to optimise management for YP with ADHD and co-occurring ASD. Data from this study will be used to highlight the critical need for ASD assessment/intervention services in Ireland.

## **Do you have any conflicts of interest?**

No

**P-03-016**

**Core symptoms and executive function characteristics of children with ADHD with and without motor development lag | ID #457**

Abstract Submitter: Ren Yuanchun

Co-Authors: Lin Shengqi, Kuang Dongqing

## **Object**:

To investigate the core symptoms and executive function of children with and without attention deficit hyperactivity disorder(ADHD).

## **Method**:

75 children with ADHD were recruited aged 8.17±1.69, and 75 normal children aged 7.65±1.13 were recruited as normal control . Use Children's gross motor Development Test (3rd) and Standard Motor Ability Scale (2nd) to assess their gross and fine motor levels. Use SNAP-IV to assess the core symptoms of ADHD. Use Stroop color word test, Rey-Osterrich complex figure test and connection test to assess executive function.

## **Discussion**:

The proportion of motor development lag in ADHD (64%) was significantly higher than that normal children (42%)($p < 0.01$). Attention deficit symptoms of fine motor lag ADHD were significantly higher than other groups ($p < 0.01$). The score of delayed memory in gross and fine motor lag was significantly higher than the group only with fine motor lag ($p < 0.01$).The proportion of fine motor lag in ADHD was higher than normal children($p < 0.01$).

## **Conclusion**:

Children with ADHD are more likely to be associated with motor development lag than normal children, especially with fine motor lag. Children with fine motor lag have more attention impairment and wider range of executive function impairment.

## **Do you have any conflicts of interest?**

No

**P-04-001**

**ADHD in psychiatry trainees: Patterns of diagnosis, treatment and professional implications | ID #443**

Abstract Submitter: Raquel Medinas

Co-Authors: Margarida Cândido, João Azenha, Jona Domingos, Daniel Sousa

### **Object**:

ADHD is often underdiagnosed, impacting academic and professional performance. Psychiatry trainees may more readily identify and manage ADHD. This study will examine ADHD diagnostic prevalence, comorbidities, and professional impact among Portuguese psychiatry residents. Using a self-administered questionnaire, we will assess diagnostic history (childhood vs adulthood, self-diagnosis vs formal evaluations), medication use and symptom management.

### **Method**:

Psychiatry residents from multiple Portuguese training centers will complete an electronic survey assessing sociodemographics, diagnostic history, comorbidities, and professional impact. Data collection and preliminary analysis will be completed by May. Descriptive and inferential statistics will explore correlations between ADHD symptoms, comorbidities, and professional outcomes. No commercial funding has been received.

### **Discussion**:

Although results are pending, we anticipate insights into ADHD prevalence and its effects on clinical performance, time management, and well-being. Given the likelihood of late or overlooked diagnoses, findings may underscore the need for systematic screening and timely intervention. Associations with co-occurring psychiatric conditions will also be analyzed to inform clinical practice and training programs.

### **Conclusion**:

A structured questionnaire tailored to psychiatry residents may clarify ADHD's impact on early-career psychiatrists. This study aims to enhance recognition, reduce stigma, and improve support for residents with ADHD. By addressing these issues, we hope to contribute to better outcomes for both affected professionals and their patients.

### **Do you have any conflicts of interest?**

No

I don't have a conflict of interest

**P-04-002**

**Prevalence, self-diagnosis and treatment of ADHD among medical trainees: A review of current evidence | ID #450**

Abstract Submitter: Raquel Medinas

Co-Authors: Margarida Cândido, João Azenha, Joana Domingos, Daniel Sousa

**Object**:

This narrative review examines psychostimulant use and misuse among medical residents, focusing on prevalence, diagnoses, motivations, and specialty differences. We aim to synthesize recent evidence on psychostimulant consumption, its clinical implications, and associated risk factors in both clinical and academic contexts.

**Method**:

A systematic search was conducted on PubMed and Google Scholar for articles published. Inclusion criteria encompassed studies from journals addressing psychostimulant use in residency programs. Data extraction focused on quantitative metrics, including prevalence rates, diagnostic criteria (e.g., ADHD), and specialty-specific findings.

**Discussion**:

Psychostimulant use is widespread among medical residents, with up to 50% reporting non-prescribed use. Misuse rates are higher in surgical residents (46%) than in family medicine (24%), likely due to workload and irregular shifts. Common motivations include concentration enhancement, managing sleep deprivation, and coping with academic pressure. Misuse is linked to cardiovascular risks and mental health deterioration.

**Conclusion**:

This review highlights the variability of psychostimulant use among medical residents and the need for standardized diagnostics and prevention programs. Balancing performance benefits with long-term risks is challenging. Future research should examine longitudinal outcomes and intervention efficacy across specialties. Psychosocial support, regulations, and education can help reduce misuse and raise awareness of adverse effects.

**Do you have any conflicts of interest?**

No

I do not have a conflict of interest.

**P-04-003**

**Association between ADHD and cardiometabolic risk profile in patients with acute myocardial infarction | ID #391**

Abstract Submitter: Honghui Yao

Co-Authors: Isabell Brikell, Henrik Larsson, Ebba Rietz, Catharina Hartman, Tomas Jernberg, Pontus Andell, Zheng Chang

**Object**:

Attention-deficit/hyperactivity disorder (ADHD) is increasingly diagnosed in adults and is associated with cardiometabolic risk in the general population. Yet, the associations between ADHD and cardiometabolic risk profile, participation in non-pharmacological interventions, and long-term outcomes in patients with myocardial infarction (MI) remain unclear.

**Method**:

This observational study involved patients from the SWEDEHEART registry, aged 18 to 74 years old, diagnosed with their first acute MI from 2006 to 2020. We assessed the associations between ADHD and cardiometabolic risk profile (clinical parameters, disease histories, behavioral factors), engagement in guideline-recommended non-pharmacological interventions, recurrent cardiovascular events, and mortality.

**Discussion**:

We analyzed 582 patients with MI and ADHD and 2,704 without ADHD. Most clinical parameters and disease histories did not differ significantly. However, patients with ADHD had higher risks of smoking (RR = 1.53; 1.36 to 1.71), were less likely to stop smoking after MI (RR = 0.76; 0.63 to 0.91), had a higher rate of all-cause mortality (HR = 2.02;  1.05-3.88 ) after discharge, but not recurrent cardiovascular events.

**Conclusion**:

Patients with MI and ADHD present similar cardiometabolic risk profiles but poorer lifestyle behaviors, lower engagement in recommended interventions, and higher mortality compared to those without ADHD, underscoring the need for integrated cardiology care with psychiatric services.

**Do you have any conflicts of interest?**

No

**P-04-004**

**Professional perspectives on the management of adult ADHD in Italy | ID #114**

Abstract Submitter: Silvia Montanari

Co-Authors: Ilaria Gervasini, Sara Beomonte Zobel, Vito Pinzone, Valentina Maria Piras, Daniele Segatori

### **Object**:

The management of ADHD in adulthood presents unique challenges for healthcare and educational professionals, particularly in contexts like Italy where adult ADHD is less widely recognized. This study aims to capture the perspectives of professionals working with adults with ADHD, focusing on the challenges they face and their perceived needs.

### **Method**:

A national survey was conducted among psychologists, psychiatrists, educators, and psychiatric rehabilitation technicians. The survey explored their experiences, the challenges encountered in their daily practice, and their perspectives on how the management of adult ADHD could be improved.

### **Discussion**:

The survey provides a detailed snapshot of the current state of professional practice in the field of adult ADHD in Italy. It highlights the perceived limitations, unmet needs, and systemic challenges faced by professionals, as well as their views on opportunities for improvement.

### **Conclusion**:

This study offers a descriptive overview of the challenges and needs of professionals managing adult ADHD in Italy. The findings can serve as a starting point for discussions on how to better support professionals and enhance the quality of care for adults with ADHD.

### **Do you have any conflicts of interest?**

No

**P-04-005**

**Stimulant treatment for ADHD and risk of first and repeat juvenile criminal offending: A population-based cohort study | ID #256**

Abstract Submitter: Timothy Nielsen

Co-Authors: Ralph Nanan, Tony Butler, Natasha Nassar, Alison Poulton

**Object**:

Examine the risk of criminal offending among children and young adults with attention-deficit/hyperactivity disorder (ADHD) in Australia, differences in risk between first and repeat offenses, and whether the risk is reduced by treatment with stimulant medications.

**Method**:

A population-based cohort study of children born 1990-2005 and followed until 2016 in New South Wales. Patients with ADHD were frequency matched on sex, age, and postcode to controls. Treatment was identified from stimulant authorizations and proven offenses from court records. Hazard Ratios (HR) and 95% confidence intervals (CI) were calculated with modified Cox regression (first offense) and Prentice-Williams-Peterson models (repeat offenses).

**Discussion**:

The cohort included 75,650 individuals with ADHD and 745,634 controls without ADHD. ADHD increased the risk of a first offense vs. controls and treatment decreased this risk in all groups. HRs for males were reduced for repeat offenses, but treatment was protective (age 10-17: untreated HR 1.09 95%CI 1.05-1.13; treated HR 0.97 95%CI 0.90-1.04). No association was found in females, except age 10-17 (treated HR 1.26 95%CI 1.02-1.56).

**Conclusion**:

Individuals with ADHD were at increased risk of criminal offending, but stimulant treatment reduced the risk of a first offense. This association was reduced among repeat offenders, with only modest benefit of treatment among males and no association among females. Adequate treatment resources may help keep young people with ADHD out of the criminal justice system.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Dr Poulton discloses personal fees and non-financial support from Shire/Takeda, outside the submitted work; and book royalties from Disruptive Publishing (ADHD Made Simple). No additional potential conflicts of interest are disclosed.

**P-04-006**

**ADHD and risk of cause-specific mortality: A population-based cohort study | ID #255**

Abstract Submitter: Timothy Nielsen

Co-Authors: Ralph Nanan, Tony Butler, Natasha Nassar, Alison Poulton

**Object**:

Examine all-cause and cause-specific mortality among young people with attention deficit/hyperactivity disorder (ADHD) in Australia. Estimate the association of ADHD diagnosis (case vs. control) and stimulant treatment status (treated time vs. untreated time) with the risk of mortality.

**Method**:

A population-based cohort study of 85,378 individuals with stimulant treatment for ADHD and 341,512 controls, matched on age and sex, born 1990-2009 and followed to 2020 in New South Wales, Australia. Mortality rate ratios and hazard ratios (HR) with 95% confidence intervals (CI) from Cox regression models were calculated by patient sex and age at first treatment, accounting for potential effect modification by mental health comorbidity.

**Discussion**:

In total, 445 cases and 948 controls died (MRR 1.88 95%CI 1.67-2.13 for males, MRR 1.85 95%CI 1.37-2.50 for females). After controlling for mental health comorbidity, ADHD increased the risk of transport accidents and accidental poisonings among males, and intentional self-harm among females. Stimulant treatment reduced the risk among males (HR 0.24 95%CI 0.11-0.52) but not females (HR 1.01 95%CI 0.43-2.39).

**Conclusion**:

Young people with ADHD in Australia are at increased risk of death compared to their peers without ADHD, primarily from potentially preventable external causes. The effect of ADHD was modified by mental health comorbidity, but ADHD still increased the risk for specific external causes after adjusting for comorbidity. Stimulant medication reduced the risk for males but not for females.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Dr Poulton discloses personal fees and non-financial support from Shire/Takeda, outside the submitted work; and book royalties from Disruptive Publishing (ADHD Made Simple). No additional potential conflicts of interest are disclosed.

**P-04-007**

**Global perspectives on ADHD treatment practices in children and adolescents: A pilot study | ID #178**

Abstract Submitter: Özlem Özcan

Co-Authors: Sabide Duygu Uygun, Ezgi Kurtuldu, Didem Behice Öztop

### **Object**:

This study aimed to explore clinical approaches to ADHD treatment worldwide, focusing on management challenges, treatment methods, and factors affecting access to care. The goal was to identify regional differences and highlight areas requiring standardized international guidelines for better ADHD management.

### **Method**:

Data were collected through an online survey conducted via the ADHD World Federation, with healthcare professionals from 13 countries completing the survey. The survey included questions on demographics, professional background, treatment resource accessibility, and clinical decision-making processes related to ADHD care.

### **Discussion**:

Significant differences were observed in treatment practices, with resource availability and cultural attitudes influencing approaches. Medication was more common in resource-limited areas, while behavioral therapies and parent training were emphasized in regions with sufficient resources. Financial and infrastructural barriers limited care access in parts of South America and South Africa.

### **Conclusion**:

ADHD treatment approaches vary widely based on resource availability, economic conditions, and cultural factors. The findings emphasize the need for international standards, especially to improve treatment access in low-resource regions. Expanding behavioral therapies and enhancing ADHD education for parents and teachers could improve treatment outcomes.

### **Do you have any conflicts of interest?**

No

**P-04-008**

**Non-suicidal self-injury and ADHD in adults: A systematic review and meta-analysis | ID #367**

Abstract Submitter: Ambar Lyned Rodriguez-Araud

Co-Authors: Maria C. Velez-Pastrana

**Object**:

Although Attention Deficit/Hyperactivity Disorder (ADHD) increases the risk for Non-Suicidal Self-Injury (NSSI) and suicidality across genders and age groups, research has focused mainly on adolescents and youth.Therefore, we examined the association between NSSI and ADHD symptoms in adults, through a systematic review and meta-analysis of peer-reviewed studies following PRISMA guidelines.

**Method**:

We searched PUBMED, EMBASE and EBSCOhost databases for peer-reviewed studies published in English between 2000-2024 that report measures of the association between NSSI and ADHD or NSSI and impulsivity in adults. We screened 2,871 abstracts and 82 full-text articles, resulting in 32 full-text articles. Among those,we analyzed data from 5 that reported associations for ADHD and NSSI specifically. We obtained pooled odds ratios (OR's) with 95% CIs.

**Discussion**:

From a pool of 3,679 references, we selected 5 studies for meta-analysis. Using a random-effects (restricted maximum likelihood) model, we pooled log ORs and found a significant association between ADHD and NSSI (Summary OR = 2.176, 95% CI [1.692, 2.799]; $p < .0001$). This indicates a strong effect size for the association between ADHD and NSSI.

**Conclusion**:

There is a strong association between NSSI and ADHD across diverse populations. These findings highlight the importance of screening for risk behaviors such as NSSI and suicidality in adult ADHD populations, as well as considering the potential impact of undiagnosed ADHD when presented with self-harming patients. We will discuss clinical and research implications.

**Do you have any conflicts of interest?**

No

**P-04-009**

**Adult ADHD: Associated medical conditions and related factors | ID #302**

Abstract Submitter: Luca Rolle

Co-Authors: Camilla Perotti, Gabriele Di Salvo, Giuseppe Maina

**Object**:

This observational cross-sectional study aims to assess the prevalence of general medical conditions (GMCs) among adults diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and to examine their potential associations with socio-demographic and clinical variables.

**Method**:

Clinical records of 196 adult ADHD outpatients treated at the Psychiatric Unit of San Luigi Gonzaga Hospital (Orbassano) between January–November 2022 and July 2023 were analyzed. $\chi^2$ tests and ANOVA were used for categorical and continuous variables, respectively, with False Discovery Rate correction. Binary logistic regression was also conducted as a secondary statistical approach

**Discussion**:

Ninety-four participants (48%) presented with at least one general medical condition (GMC), with endocrine/metabolic disorders being the most prevalent (14.8%). ADHD patients with GMCs exhibited a significantly higher prevalence of psychiatric family history (56.7% vs. 30.9%). This association remained statistically significant following logistic regression analysis.

**Conclusion**:

The study identified a high prevalence of GMCs in adults with ADHD, emphasizing the need for integrated care to improve management and well-being. A positive family history of psychiatric disorders was the sole factor significantly associated with GMCs. Due to the cross-sectional design and small sample size, the findings require cautious interpretation and further research for confirmation

**Do you have any conflicts of interest?**

No

**P-04-010**

**Seasonality and the impact of the COVID-19 pandemic on ADHD medication utilization in Poland | ID #154**

Abstract Submitter: Marcin Rzeszutek

Co-Authors: Tomasz Wolańczyk

## **Object**:

To investigate the seasonality and the impact of the COVID-19 pandemic on ADHD medication usage, including immediate-release (IR), long-acting (LA), and osmotic-controlled release oral delivery system (OROS) of methylphenidate, as well as atomoxetine consumption, in Poland from February 2018 to April 2024.

## **Method**:

Data on ADHD medication consumption, were analyzed using defined daily doses (DDD) per 1,000 inhabitants per day. Seasonal variation was assessed with the Holt-Winters method, and changes post-March 2020 were evaluated by comparing pre- and post-pandemic monthly values. The test statistic, denoted as Q, measured pairs of months where post-pandemic values exceeded pre-pandemic ones, with a p-value $< 0.05$ indicating a significant increase.

## **Discussion**:

There was a clear seasonal pattern in ADHD medication consumption, with a decrease observed in June, July, and August for all the drugs studied.

A statistically significant increase in consumption ($p < 0.05$) after the onset of the pandemic in March 2020 was observed for ADHD medications overall, as well as for atomoxetine and the IR and LA formulations of methylphenidate. No significant increase was noted for the OROS formulation.

## **Conclusion**:

The consumption of ADHD medications in Poland has shown a notable increase in recent years. The identified seasonality patterns and the observed rise in consumption may provide valuable insights for improving healthcare system planning and optimization, as well as for preparing to address emerging challenges.

## **Do you have any conflicts of interest?**

No

**P-04-011**

**Associations between ADHD symptoms and objectively measured physical activity across developmental stages among girls and boys: Findings from the Millennium Cohort Study | ID #242**

Abstract Submitter: Amandine Sénéquier

Co-Authors: Stamatina Iliodromiti, Jessica Agnew-Blais

## **Object**:

Research has found that children and adolescents with ADHD tend to be more physically active. However, it remains unclear how the relationship between ADHD symptoms and physical activity (PA) evolves across different developmental stages. This study examined the associations between ADHD symptoms and objectively measured PA in childhood, early and late-adolescence, comparing associations between sexes.

## **Method**:

This study used data from the UK Millennium Cohort Study at ages 7 (n=14,043), 11 (n=13,469), 14 (n=11,872) and 17 (n=10,757). ADHD symptoms were assessed by the ADHD subscale of the Strengths and Difficulties Questionnaire (SDQ) and moderate-to-vigorous PA (MVPA) was measured with accelerometers. Multiple linear regressions and mixed-effects regression models estimated ADHD SDQ scores adjusting for key confounders (e.g. SES, BMI).

## **Discussion**:

MVPA was associated with higher SDQ scores at ages 7 ($p<0.001$) and 14 ($p=0.004$); stronger at age 7. MVPA and SDQ were associated in boys (both ages) and girls (age 7), with similar results for hyperactivity symptoms. Inattention symptoms were associated with MPVA at age 7 and in girls ($p<0.05$), but not at age 14. MVPA at age 7 predicted higher SDQ scores at ages 11 ($p=0.003$) and 17 ($p=0.015$); MVPA at age 14 did not predict SDQ scores at age 17.

## **Conclusion**:

More MVPA was linked to higher ADHD symptoms in children cross-sectionally and prospectively (childhood MVPA predicts later ADHD symptoms). Childhood MVPA more strongly predicted ADHD symptoms than adolescent MVPA. MVPA and ADHD symptoms were more associated in boys than girls, perhaps reflecting mainly inattentive traits in girls. These results highlight the importance of developmental stage and gender in understanding links between PA and ADHD.

## **Do you have any conflicts of interest?**

No

**P-04-012**

**Comorbid problems of ADHD traits and other developmental traits in general university students: A pilot study | ID #195**

Abstract Submitter: Nana Shinoda

Co-Authors: Naoko Shinoda, Haruo Shinoda, Eiji Shimizu

## **Object**:

In Japan, support for university students with disabilities is often based solely on diagnosis, while support for comorbidities involves trial and error. There is a need to develop a method to comprehensively understand disablility characteristics. This study aims to clarify the relationship between the severity of ADHD characteristics and the severity of characteristics and those of ASD, SLD, DCD, insomnia, and sensory hypersensitivity.

## **Method**:

85 undergraduates and graduates from a Tokyo university answered questionnaires in December 2024. The average age was 20.38 years, and 80% were sophomores or above. Students completed questionnaires online, with consent obtained beforehand. Materials included: (1) ADHD traits (DSM5-TR), (2) AQ-J, (3) Learning disabilities in Japan (LDSP28), (4) Motor coordination, (5) Athenes Insomnia Scale (AIS-J), (6) Sensory irritability, and (7) GHQ12.

## **Discussion**:

Cluster analysis showed that 8.2% of subjects were primarily inattentive, 1.2% were mixed, and none were hyperactive/impulsive. Additionally, 35% had ADHD traits below the diagnostic threshold. ADHD symptom severity was positively correlated with mental health. Controlling for mental health, inattention was correlated with SLD, while hyperactivity/impulsivity was correlated with SLD, sensory hypersensitivity, and fine motor skills.

## **Conclusion**:

Even if they do not meet the diagnostic criteria for ADHD, individuals still face a variety of difficulties. Therefore, it was suggested that a checklist is needed to comprehensively grasp cognitive characteristics in the gray zone below the diagnostic criteria in order to support students with disabilities.

## **Do you have any conflicts of interest?**

No

**P-04-013**

**Overweight and obesity in school-aged children with ADHD: A retrospective study from Western China | ID #446**

Abstract Submitter: Jing Tan

Co-Authors: Li Chen, Bin Peng

### **Object**:

This study aimed to explore the relationship between ADHD and the risk of overweight/obesity in school-aged children.

### **Method**:

A retrospective analysis of medical records (2011-2023) from the Children's Hospital of Chongqing Medical University included 1,164 children with ADHD and 23,282 controls. Chi-square tests compared obesity and combined overweight/obesity rates between the groups, stratified by age and gender. Logistic regression identified risk factors, with $p< 0.05$ considered significant.

### **Discussion**:

The obesity rate in the ADHD group was 12.54%, and the combined overweight/obesity rate was 20.62%, higher in boys than girls. Rates increased with age, especially in boys. The ADHD group had higher overweight/obesity rates than controls, particularly in boys. Logistic regression identified high birth weight, male sex, ADHD, and older age as risk factors for childhood overweight/obesity.

### **Conclusion**:

This study provides important data from Western China on ADHD and overweight/obesity. The data supports that children with ADHD have higher rates of overweight/obesity and introduces birth weight as a variable. However, due to the small sample size of girls, the findings regarding girls should be interpreted with caution.

### **Do you have any conflicts of interest?**

No

**P-04-014**

**The prevalence of ADHD in inpatients with a primary diagnosis of depression | ID #70**

Abstract Submitter: Svenja Wudy

Co-Authors: Jue Huang, Nicole Mauche, Christian Makiol, Maria Strauß

**Object**:

Attention deficit hyperactivity disorder (ADHD) and depression frequently co-occur, with affective disorders overlapping in symptoms and psychopathology with ADHD. Symptoms of depression can overshadow ADHD's core symptoms, complicating recognition and diagnosis. Therefore, this study aimed to determine ADHD prevalence among patients in a ward specializing in affective disorders.

**Method**:

New admitted inpatients completed the Adult ADHD Self-Report Scale (ASRS). Patients exceeding the cut-off underwent comprehensive ADHD assessment post-depression symptom reduction. Diagnostic and clinical data were collected. Statistical analysis employed Pearson's chi-square, Mann-Whitney U tests for group comparisons, and repeated measures ANOVA to evaluate depressive symptom changes.

**Discussion**:

Out of 142 participants, 55 screened positive and 10.56% received an ADHD confirmation. Sixty-six initially negative screened patients showed clinical ADHD evidence, and further assessment identifies five additional ADHD cases, bringing overall prevalence to 14.08%. Significant differences in depressive symptom onset, in less than 7 days, appear, with 47.1% ($p<0.001$) experiencing rapid onset.

**Conclusion**:

Considering comorbid ADHD in depression is of particular importance. Screening instruments are valuable for identifying ADHD in depressed patients. The results of our study indicate that a rapid onset of depression may signal hidden ADHD. Recognizing comorbid ADHD has significant clinical implications, influencing both diagnosis and treatment, which can be a game changer in patient outcomes.

**Do you have any conflicts of interest?**

No

**P-04-015**

**Investigating the effects of ethnic racial identity on ADHD and comorbid psychopathology: Implications for racial-ethnic minority university students in the United States | ID #110**

Abstract Submitter: Michael Meinzer

Co-Authors: Carlos Melendez

## **Object**:

Ethnic Racial Identity (ERI) reflects individuals' attitudes towards their ethnic-racial group. ERI has been observed to contribute to mental health (e.g., depression). However, little is known about how the various dimensions of ERI contribute to depression in the context of ADHD symptoms. The present study explored whether aspects of ERI serve as protective factors in the association between ADHD and depressive symptoms in university students.

## **Method**:

Data was collected via a cross-sectional study of university students across eight disparate universities in the US. Students (n=2084; 88% female; Mage=19.5, SD=2.88) who identify as being an ethnic racial minority (ERM) were included in analyses. The study utilized a mixed-effects negative binomial regression with zero inflation to investigate the interactive effects between ADHD symptoms and three ERI dimensions on depressive symptoms.

## **Discussion**:

The conditional model yielded a significant moderating effect of affirmation (i.e., affect individuals associate with their ethnic-group membership) on the association between ADHD and depressive symptoms ($b=-0.014$, $p < .001$) Exploration (i.e., degree to which individuals have explored their ethnicity) and resolution (i.e., degree to which individuals have resolved what their ethnic identity means to them) dimensions did not moderate this link.

## **Conclusion**:

These results provide evidence that ERI, specifically affirmation, serves as a protective factor in the relationship between ADHD and depression among ERM university students in the US. These results support the utility of considering ERI (e.g., increasing positive regard for race/ethnicity) in ADHD interventions for university students. Future research should explore how ERI shapes the experience of ADHD among university students.

## **Do you have any conflicts of interest?**

No

**P-04-016**

**Consistency of ADHD diagnosis during healthcare transitions | ID #21**

Abstract Submitter: Alberto Rodríguez-Quiroga

**Object**:

The misconception that ADHD resolves in adulthood, coupled with the lack of clear diagnostic criteria for adults, has resulted in inconsistencies in understanding its persistence, complicating appropriate treatment. This study aimed to assess the continuity of ADHD diagnoses and subtypes in individuals transitioning to adulthood within a specialized clinical setting, utilizing DSM-5 criteria.

**Method**:

Retrospective data were gathered from 59 patients diagnosed with ADHD at the Hospital Universitario Infanta Leonor in Madrid, with symptom onset occurring between the ages of 2 and 12. Subgroups were created based on the initial diagnosis and subtype stability, and both descriptive and statistical analyses were conducted using SPSS software.

**Discussion**:

The persistence rate was 93.2%. Persistence was strongly associated with the need for ongoing follow-up, but not with gender, age, or current treatment. Both the persistent and remission groups exhibited high levels of comorbidity. The initial inattentive subtype demonstrated greater stability, with a preservation rate of 95.83%. In contrast, the combined subtype showed a greater decline over time, with a preservation rate of 71.4%.

**Conclusion**:

The stability of ADHD, when assessed using appropriate criteria, is higher than previously reported. Continuous follow-up is essential, regardless of the current diagnostic status, particularly during the transition from adolescence to adulthood.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Takeda

**P-04-017**

**From focus to pressure: Exploring essential hypertension risk in Israeli children with ADHD | ID #122**

Abstract Submitter: May Polukst

Co-Authors: Eugene Merzon, Shai Ashkenazi, Ehud Grossman, Avivit Golan-Cohen, Shlomo Vinker, Ariel Israel

**Object**:

Current data on the association between Essential Hypertension (EH) and Attention-Deficit/Hyperactivity Disorder(ADHD) in pediatric populations is limited, with most research focusing on adults. This study investigates the risk of EH in Israeli youth aged 5–18 years with ADHD, examining the long-term prevalence of EH and trends in antihypertensive medication use.

**Method**:

A retrospective cohort study was conducted using Leumit Health Services (LHS) data. The ADHD cohort (N=18,558) was compared to matched controls (N=37,116) based on age, sex, and socioeconomic status. Diagnosis of ADHD and EH were identified using ICD-9/10 codes. Logistic regression analyses assessed the association, while antihypertensive medication use was evaluated over a 20-year follow-up. The LHS IRB approved the study.

**Discussion**:

ADHD had a higher prevalence of EH, with an odds ratio (ORs) of 3.17 (95% CI: 1.46–7.16, p=0.0017) at 5 years, 2.94 (95% CI: 1.45–6.09, p=0.0013) at 10 years, and 1.92 (95% CI: 1.26–2.93, p=0.0015) at 20 years. ADHD patients showed greater use of antihypertensive medications, including CCB (OR 1.85, 95% CI: 1.02–3.35, p=0.03482), ACEi and ARBs (OR 2.20, 95% CI: 1.15–4.25, p=0.013), and diuretics (OR 1.77, 95% CI: 1.21–2.60, p=0.0028).

**Conclusion**:

These findings highlight a strong association between ADHD diagnosis and risk of EH, necessitating regular cardiovascular monitoring in pediatric ADHD patients. Further studies are needed to uncover shared biological and behavioral mechanisms and guide early targeted interventions to improve long-term outcomes in this vulnerable population.

**Do you have any conflicts of interest?**

No

**P-05-001**

**Indicators of impulsivity in a routine clinical evaluation of adult ADHD | ID #203**

Abstract Submitter: Hui Dong

Co-Authors: Anselm B.M. Fuermaier, Janneke Koerts, Gerdina H.M. Pijnenborg, Nana Guo, Norbert Scherbaum, Bernhard Müller

**Object**:

Impulsivity is a core feature in the clinical syndrome of attention-deficit/hyperactivity disorder (ADHD), yet impulsivity may not be a unitary construct. This study seeks to map the structure of impulsivity in adults with ADHD and the relationships between these measures by examining a proposed three-factor structure, i.e., commission errors (CE), response time variables (RT) in neuropsychological tests, and self-reported information (SR).

**Method**:

Clinical data from 654 adults assessed for ADHD were used, with participants completing impulsivity measures, including the Barratt Impulsiveness Scale and neuropsychological tests for attention, interference, and inhibition. Normative data interpreted impulsivity severity. Network and confirmatory factor analyses (CFA) evaluated a three-factor structure, and regression models examined the influence of demographic and clinical characteristics.

**Discussion**:

To ensure stable network estimates and sufficient statistical power, the sample was split in a 3:1 (492 for network analysis and 162 for CFA) across 10 random iterations. Both-factor methods supported a three-factor structure, but the RT factor was least stable. Impulsivity levels were highest in SR, followed by CE, and lowest in RT. Regression revealed demographic and clinical characteristics were significantly related to SR and CE, but not RT.

**Conclusion**:

Our findings support a three-factor structure of impulsivity in clinical assessments and highlight the need to interpret self-reports independently from performance-based tests. The consistency across measures, such as commissions and response times, suggests repeated testing across tasks may be redundant.

**Do you have any conflicts of interest?**

No

**P-05-002**

**The clinical utility of QbMobile as a smartphone application for the assessment of ADHD | ID #102**

Abstract Submitter: Urban Gustafsson

Co-Authors: Simon Larsson, Núria Casals, Robert Nolen, Ragini Sanyal, Mikkel Hansen

**Object**:

QbMobile is a software application for the administration of a performance test similar to the QbTest to provide objective measurements of activity, inattention, and impulsivity in the clinical assessment of Attention Deficit Hyperactivity Disorder (ADHD). The objective was to validate that QbMobile can provide objective symptom quantifications that show clinically significant differences between an ADHD and a normative cohort.

**Method:**

The QbMobile application was used on an iPhone. Participants (6-60 years) held the smartphone and tapped the screen each time a target stimulus appeared on-screen and not to tap on non-target stimuli. The smartphone tracked the participants' movements with the camera and movements from the sensors to measure activity. The resulting cohorts contained 20% of the original pooled dataset for a model train-based validation.

**Discussion:**

A Total Score was calculated indicating the likelihood of ADHD between 0 and 100. A mean (SD) Total score of 83.0 (17.5) was seen in the ADHD cohort (n=63) compared to a score of 48.9 (18.8) in the normative cohort (n=354) ($p<0.001$). A difference in cardinal domains (activity, impulsivity, and inattention and movement pattern) were found between the ADHD and the Norm group ($p<0.01$).

**Conclusion:**

These findings show that QbMobile was able to differentiate between ADHD and normative cohorts and can be a useful tool as a more accessible objective diagnostic test in the clinical assessment of ADHD and the evaluation of treatment interventions.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I am an employee of Qbtech AB, Stockholm, Sweden, the manufacturer of QbMobile

**P-05-003**

**Temperament traits and ADHD subtypes in adults: Insights from latent profile analysis | ID #194**

Abstract Submitter: Henning Heinze

Co-Authors: Clara Teuchert, Julia Kerner Auch Koerner, Monika Daseking

## **Object**:

This study examines ADHD subtypes in adulthood based on temperament dimensions. Temperament reflects stable individual differences in emotional, motor, and attentional reactivity, as well as self-regulation, shaping behavior and personality. Traits like Surgency/Extraversion, Negative Affect, and Effortful Control are strongly associated with ADHD symptoms, supporting their use as a basis for subtyping.

## **Method**:

A sample of N = 264 was recruited for the DiADE project on adult ADHD. Diagnostic examinations were conducted with two psychotherapeutic practices and a hospital. Assessments included interviews and questionnaires for ADHD symptoms and temperament traits, as well as self-assessments, clinical symptoms, and cognitive performance to explore their links to temperament subgroups. Ethics Committee approval was obtained for all procedures.

## **Discussion**:

This study highlights the potential of temperament profiles to improve understanding and classification of ADHD subtypes in adults. By examining their associations with self-assessments, clinical impressions, and cognitive performance, the study provides a multidimensional perspective on ADHD. These insights may clarify the role of temperament in ADHD's manifestation and support the validity of temperament based subtyping.

## **Conclusion**:

Identifying reproducible temperament profiles linked to ADHD subtypes could enhance diagnostic precision and support the development of personalized therapeutic strategies. Incorporating self-assessments, clinical impressions, and cognitive data into ADHD subtyping may improve clinical practice. Detailed results and analyses will be presented at the upcoming conference.

## **Do you have any conflicts of interest?**

No

**P-05-004**

**Validity of an online assessment of ADHD among a real-world sample of adults seeking web-based behavioral healthcare | ID #159**

Abstract Submitter: Barry Herman

Co-Authors: Stephen Faraone, Andrew Cutler, Jeffrey Newcorn, Emily M Lafrance, Michelle Ripper Lewis, Charles R Ruetsch

**Object**:

To compare the results of a proprietary online assessment of adult ADHD with the current standard of care, a clinical interview, among a real-world population of adults seeking online ADHD assessment.

**Method**:

Participants first underwent a clinical interview, then the online ADHD assessment. Agreement between the two assessments was measured using a 2x2 matrix. In cases of disagreement, an adjudicating clinician reviewed both assessments and rendered a final diagnosis. To examine factors contributing to disagreement, adjudications and online assessment results were compared, and the role of ADHD presentation was explored.

**Discussion**:

The accuracy rate of the online assessment was 78% (PPV: 94.9%, NPV: 15.1%, sensitivity: 80.6%, specificity: 44.0%, kappa: 0.13). An examination of cases of disagreement revealed that the online assessment was more conservative than the clinical interview. Over 80% of off-diagonal cases had an ADHD-positive clinical interview result, whereas the online assessment was unable to confirm a diagnosis of ADHD.

**Conclusion**:

Within a population of adults seeking assessment for ADHD, the online assessment was able to correctly identify over 80% of ADHD-positive cases and presents a valid alternative to a clinical interview. This is the first study to validate and demonstrate the utility of an online ADHD assessment relative to the standard of care among individuals seeking online behavioral healthcare.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Chief Medical Officer of Mentavi Health

**P-05-005**

**AKCENT-ADHD: Unraveling clinical pathways and comorbidities of adult ADHD in Poland | ID #290**

Abstract Submitter: Rafal Jaeschke

Co-Authors: Joanna Sułkowska, Marcin Siwek, Dominika Dudek

**Object**:

This study aims to examine the diagnostic and treatment pathways of adults diagnosed with ADHD in Poland, with a particular focus on the prevalence of misdiagnoses, associated comorbidities, and factors contributing to diagnostic delays.

**Method**:

This case-control study will analyze medical records from the University Hospital in Krakow, Poland, following approval by the Jagiellonian University Bioethics Committee. Adults with ADHD (DIVA-5 diagnosis) and two matched control groups – patients with other psychiatric disorders and individuals without mental health diagnoses – will be included. Statistical analyses will involve descriptive and comparative methods and logistic regression.

**Discussion**:

This study will examine diagnostic and treatment patterns in adult ADHD, focusing on misdiagnoses (e.g., depression, anxiety) and prior interventions. It will also assess the prevalence of somatic comorbidities, such as hypertension and diabetes. Two control groups will help isolate clinical patterns specific to ADHD.

**Conclusion**:

The AKCENT-ADHD study represents the first comprehensive case-control investigation of adult ADHD in Poland. The findings are anticipated to elucidate the diagnostic challenges and inform strategies aimed at achieving earlier and more precise diagnoses, thereby enhancing treatment outcomes and improving the overall well-being of affected individuals.

**Do you have any conflicts of interest?**

No

**P-05-006**

**Machine learning for ADHD prediction using CPT on a smartphone application | ID #100**

Abstract Submitter: Simon Larsson

Co-Authors: Núria Casals, Mikkel Hansen

**Object:**

Continuous Performance Tests (CPTs) are widely used as objective measures in Attention-Deficit/Hyperactivity Disorder (ADHD) assessment. Sensor data and machine learning are increasingly adopted for mental health monitoring. This investigation explores (i) the feasibility of using smartphones to administer a CPT for ADHD assessment and (ii) whether data from built-in sensors can help predict an ADHD diagnosis.

**Method:**

The study uses data from a control group of neurotypical individuals and an ADHD cohort of unmedicated patients. The dataset is divided into a training and test set, and a machine learning model is developed using the training set. The model is trained by dividing features into four groups, Demographic, CPT, Face, and Motion, which are then iteratively added and evaluated on their ability to predict ADHD on the test set.

**Result:**

A total of 1833 neurotypical individuals and 505 unmedicated ADHD patients were part of the study. The best performing model combines all feature groups by a PR-AUC of 0.706, sensitivity of 0.810 and specificity of 0.783, with a considerable performance increase due to the phone sensor features addition. Results did not differ significantly by age group (6-11 and 12-60 years old) and sex.

**Conclusion:**

The study provides a robust machine-learning model that is based on a large control group together with an ADHD cohort. The experiments demonstrated that ADHD can be assessed with high accuracy using CPTs on smartphones. Integrating face-tracking and motion sensor data with CPT features further enhanced performance, indicating that data from a mobile device can surpass the accuracy of traditional computer-based ADHD assessments.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

The authors are employed at Qbtech AB, Stockholm, Sweden, the company that provided the underlying data for the conduct of this experiment.

**P-05-007**

**Impulsivity and ADHD: Conceptual background for a proposal of cardinal symptom | ID #402**

Abstract Submitter: Camila Martínez

Co-Authors: Luis José Flores

## **Object**:

ADHD has undergone various conceptualizations, yet controversy persists regarding its diagnostic criteria, particularly the definition of impulsivity as a symptomatic cluster. Objective: to analyze conceptual models predating the DSM-5 that include impulsivity and its definition.

## **Method**:

Methodology: A historical-descriptive study of pre-DSM-5 models was conducted, followed by a conceptual analysis highlighting the strengths and limitations of each model. Results: Several models provide a framework to understand the manifestation of impulsivity, describing inhibitory volition (Still, 1902), difficulties delaying gratification (Lauffer, 1957), emotional dysregulation (Wender, 1960), and motivation (Glow & Glow, 1979).

## **Discussion**:

Discussion: A better characterization of the impulsivity domain, based on these models, enhances the psychopathological understanding of ADHD, explains the development of comorbidities in adulthood, and accounts for manifestations not currently included in diagnostic criteria but supported by existing evidence like emotional dysregulation

## **Conclusion**:

Conclusions: Conceptual evidence supports the inclusion of an emotional component in the impulsivity symptom cluster. Further refinement of the emotional impulsivity concept is needed for more accurate diagnosis.

## **Do you have any conflicts of interest?**

No

**P-05-008**

**Factor structure of the parent questionnaire of the Essen Interview on School Biographies (EIS-B) in the diagnosis of adult ADHD | ID #276**

Abstract Submitter: Bernhard W. Müller

Co-Authors: Jamie L. Weidner, Pd Dr. Mona Abdel-Hamid, Dr. Rebekka Bauer, Dr. Lisa Brotte, Dr. Naomi Lyons, Nadia Rüdel, Ragnar Schwierczok, Prof. Dr. A.B.M. Fürmaier, Thomas Zwarg, Prof. Dr. Norbert Scherbaum

**Object**:

We assessed the factor structure of the parent questionnaire of the Essen Interview of School Biographies (EIS-B; Grabemann, 2014, DOI:10.1007/978-3-658-14176-9). Additionally, we aimed to relate the resulting factor scores to ratings of childhood symptoms and its contributions to the resulting diagnosis.

**Method**:

531 data sets from consecutive EIS-B parent raings of candidates in evaluation for adult ADHD (31.9 y, 58.2 % male, AD(H)D 59.3%) were analyzed using principal component analysis with varimax rotation (PC). Factor scores were correlated with WURS-K and EIS-B semi-structured interview scores of patients retrospective childhood symptoms and additionally analyzed as predictors of the resulting diagnosis.

**Discussion**:

Six factors explained 60.9% variance: Attention (AT,16.4%), oppositional defiance (OD,14.6%), impulsivity (I,8.8%), hyperactivity (H,8.3%) and conduct disorder (CD-V,8.3%) without and with violence (CD+V,4.9%). WURS-K correlated with OD (r=.33) but less with A (r=.25), I (r=.09) or H (r=.14). patient symptoms correlated wiht A r=.37, I r=.38 and H r=.47. Regression revealed, A,I,H and CD-V, but not OD / CD+V as associated with AD(H)D diagnosis.

**Conclusion**:

Our results point to the relevance of oppositional defiance behavior for parents retrospective ratings of their children's past behavior. While OD symptoms seemed to be relevant for parent's ratings, they were not substantially related to the final diagnosis. Our results provide support for the construct validity of the EIS-B parent questionnaire in the assessment of adult ADHD.

**Do you have any conflicts of interest?**

No

**P-05-009**

**Evaluating the feasibility and validity of Qbtest on a smartphone in participants assessed for ADHD | ID #162**

Abstract Submitter: Robert Nolen

Co-Authors: Hanna Christiansen, Urban Gustafsson, Núria Casals, Simon Larsson, Ragini Sanyal, Mikkel Hansen

## **Object**:

The study aim was to build an ADHD cohort using an investigational software application in a smartphone (QbMobile) and compare the performance to QbTest, an established objective test that measures activity, inattention, and impulsivity in the clinical assessment of Attention Deficit Hyperactivity Disorder (ADHD).

**Method**:

The study was conducted in Germany, the Netherlands, and the United States. It included participants between 6-60 years being assessed for ADHD who performed both a QbTest and a QbMobile test. Participants were instructed to sit holding the smartphone with both hands and tap the screen each time a target stimulus appeared on-screen and not tap for all other stimuli. The participants' movements were tracked by the smartphone to measure activity.

**Discussion**:

244 participants completed both QbMobile and QbTest, with more females (55%) than males (45%) and more adults (n=179) than children (n=54). QbTest and QbMobile reported higher measures of activity, inattention, and impulsivity for participants diagnosed with ADHD (n=233). The QbMobile parameters had equivalent measures in QbTest, resulting in a Pearson correlation in the range of 0.43-0.67, which was significant in each parameter ($p<0.001$).

**Conclusion**:

The investigational application (QbMobile) successfully facilitated activity, impulsivity, and inattention testing. The relationship between QbMobile and QbTest parameters and the similarity in symptom levels between applications confirms the feasibility of using smartphone-based data for separating ADHD symptom levels from neurotypical symptom levels.

## **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I am employed by Qbtech, the developer of QbMobile.

**P-05-010**

**Networks and factors of symptom and performance validity in the clinical evaluation of adult ADHD | ID #181**

Abstract Submitter: Emily Raasch

Co-Authors: Anselm B. M. Fuermaier, Johanna Kneidinger, Björn Albrecht, Hanna Christiansen

**Object**:

Neuropsychological performance tests are commonly used to assess attention-deficit/hyperactivity disorder (ADHD) in adults, but many individuals show noncredible symptom reporting and test performance. Thus, performance validity tests (PVTs) and symptom validity tests (SVTs) are critical in identifying such diagnostic errors. This study explores the role of these validity measures in the comprehensive diagnostic process for adult ADHD.

**Method**:

A total of 461 adults referred for ADHD assessment at our outpatient clinic (Marburg, Germany) were included. All underwent clinical neuropsychological assessments, including structured interviews, Conners' Adult ADHD Rating Scales, and the Qb+Test. They also completed three PVTs (Groningen Effort Test, Medical Symptom Validity Test, Amsterdam Short-Term Memory Test) and two SVTs (CAARS Infrequency and Inconsistency Indexes) were included.

**Discussion**:

Our data analyses revealed that PVTs and reported ADHD symptoms do not exhibit strong associations. Further, no meaningful relationships between the SVTs and other parameters were found. Additionally, neither the network analysis nor the factor analysis revealed a distinct PVT factor. Instead, a network of independent tests was observed.

**Conclusion**:

The absence of a PVT factor reflects the lack of a cohesive validity structure in ADHD populations, highlighting the need to rethink how validity is conceptualised and assessed in ADHD research and practice.

**Do you have any conflicts of interest?**

No

**P-05-012**

**Assessing the measurement invariance of the quick screen version of the Barkley Adult ADHD Rating Scale across sociodemographic characteristics | ID #467**

Abstract Submitter: Dustin Sarver


## **Object**:

It is crucial that measures capture the same meaning across difference groups. This study investigated the measurement invariance of the Quick Screen version of the Barkley Adult ADHD Rating Scale (BAQS), a 6-item self-report screen of ADHD symptoms (3 inattentive, 3 hyperactive/impulsive), across sociodemographic characteristics.

## **Method**:

A national sample representative of U.S. adult parents (N=796, 48.2% female, Mage=38.87 years, 60.3% Non-Hispanic white) completed the BAQS. Confirmatory factor analysis (CFA) determined the factorial structure, and multigroup CFA across adult age, sex, race, and child sex assessed metric and scalar measurement invariance by imposing equality constraints for item loadings and intercepts, respectively.

## **Discussion**:

The BAQS was reliable (ω=.903) CFA validated a two-factor model (Inattentive and Hyperactive/Impulsive) overall ($\Delta\chi 2$ $p<.001$; CFI=.98;RMSEA=.07) and in all subgroups. Multigroup CFA confirmed measurement strong invariance for child sex. Adult age and sex showed metric but not scalar invariance. The BAQS was noninvariant for adults of white versus non-white backgrounds.

## **Conclusion**:

The BAQS is internally reliable and demonstrates a 2-factor configural invariance across adult age, sex, race, and child sex. It demonstrates weak invariance across adult age and sex and is noninvariant across racial background. This indicates potential differences in item interpretation, which may result in misleading comparisons. Overall, the BAQS shows inconsistent measurement invariance across sociodemographic characteristics.


## **Do you have any conflicts of interest?**

No

**P-05-013**

**Enhancing accuracy in ADHD assessment: A critical examination of diagnosis reports | ID #148**

Abstract Submitter: Avital Tamsut

Co-Authors: Tamar Malinovitch, Yehuda Pollak, Noa Saka

**Object**:

Accurate assessment of ADHD is crucial, ensuring individuals receive correct diagnosis and access essential resources. In Israel, diagnosis relies on evidence-based assessments in accordance with diagnostic guidelines by the Ministry of Health, incorporating diagnostic criteria of the DSM-5. Our study aims to assess professionals' adherence to guidelines for adult diagnoses of ADHD and identify factors impacting clinicians in this process.

**Method**:

Three independent raters evaluated reports submitted by individuals who underwent first-time diagnosis at age 16 and above, as part of the documentation required to apply for testing accommodations, in a high-stakes test. Seventeen variables were examined, covering aspects detailed by diagnostic guidelines. Additionally, relevant clinicians were surveyed regarding the factors influencing their diagnostic process and decisions.

**Discussion**:

A minimal number of reports fully complied with guidelines. Most reports lacked a comprehensive history (72%) and clear source of information (67%), failed to indicate whether any dedicated questionnaires were used (57%). In most reports symptom counts were absent (76%), although they did describe current symptom manifestation (63%). The clinicians' survey regarding perceptions affecting their diagnostic process and decisions is ongoing.

**Conclusion**:

Diagnostic guideline adherence is undeniable essential; however, most initial diagnosis reports lack crucial details. This gap does not necessarily indicate clinician's noncompliance, but may rather reflect deficiencies in reporting. Further gaining better understanding as to the factors and challenges faced by clinicians which that influences them during the diagnostic process, is key to effectively supporting individuals with ADHD.

**Do you have any conflicts of interest?**

No

**P-05-014**

**Meta-analysis: Continuous performance tasks as embedded performance validity indicators in adults assessed for ADHD | ID #172**

Abstract Submitter: Pinar Toptas

Co-Authors: Tycho J. Dekkers, Yvonne Groen, Geraldina F. Gaastra, Dick De Waard, Anselm B.M. Fuermaier

**Object**:

Assessing credibility plays a key role in the assessment of adult ADHD, as a non-trivial minority of examinees exhibit non-credible cognitive performance. Numerous studies have explored the use of Continuous Performance Tests (CPTs) due to their potential as Embedded Validity Indicators (EVIs). This meta-analysis aims to determine the diagnostic utility of CPTs to differentiate credible from noncredible cognitive performance.

**Method**:

We included studies that used a variant of a CPT to assess at least one of four outcomes (i.e., omission, commission, reaction time, or reaction time variability). These studies followed either simulation (N = 8) or criterion-group (N = 10) research designs within the context of adult ADHD. We evaluated the diagnostic utility of CPT variants and outcomes as well as the effect of moderators such as research design and student samples.

**Discussion**:

We found a significant and large effect size (g = .99) for CPTs in distinguishing credible from non-credible groups. The Integrated Visual and Auditory CPT showed the largest effect size (g = 2.47). No significant differences emerged between the four outcomes and no moderating effect was found for student samples. Simulation designs studies (95% CI [.98, 1.72]) demonstrated a larger effect than criterion-group designs studies (95% CI [.59, .82]).

**Conclusion**:

Our robust findings demonstrate the utility of CPTs in distinguishing credible from noncredible cognitive performance. CPTs are recommended to be utilized in combination with other validity indicators, both embedded and stand-alone, to adhere to current practice standards and to address the limitations of EVIs in confusing invalid performance from genuine problems

**Do you have any conflicts of interest?**

No

**P-05-015**

**Exploring the verbal behavior of ADHD in adults on social media through NLP-derived biomarkers and machine learning | ID #311**

Abstract Submitter: Daniel Wiechmann

Co-Authors: Edward Kempa, Elma Kerz, Yu Qiao

### **Object**:

We conduct computational analyses using advanced NLP and Machine Learning techniques to investigate the verbal behavior (language use and communication patterns) of social media users diagnosed with ADHD, revealing key differences from control users and providing insights into how these features relate to DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th edition) symptoms.

### **Method**:

Diagnosed ADHD users on Reddit were identified through high-precision detection patterns, resulting in 12,070 ADHD users and a matched number of control users. Their linguistic signatures were compared across eight categories: syntactic complexity, lexical richness, readability, cohesion, stylistics, emotion, grammatical, and topical. We built a suite of shallow and deep ML models to determine predictive NLP biomarkers associated with ADHD.

### **Discussion**:

Statistical analyses revealed ADHD users write longer, more elaborated posts than controls, with higher syntactic complexity and lexical diversity. They also used more self-referential pronouns, indicating self-focus and rumination, along with elevated negative emotions like anger, fear, and disgust, suggesting emotional dysregulation. Gradient Boosting was the best shallow model (F1: 0.72), whereas BiLSTM achieved an F1-score of 0.77.

### **Conclusion**:

This study highlights how NLP-derived biomarkers from social media verbal behavior can offer novel insights, particularly in identifying individuals with ADHD who might be overlooked by traditional clinical assessments. Combining these digital biomarkers with emerging tools such as neuroimaging and physiological signals promises a more comprehensive and accurate diagnostic approach.

### **Do you have any conflicts of interest?**

No

**P-06-001**

**Impact of online health education on ADHD screening results and parenting stress among school-aged children | ID #439**

Abstract Submitter: Jing Tan

Co-Authors: Li Chen, Wenxia Yi, Jianna Shen, Bin Peng, Min Gong, Feng Li

### **Object**:

To investigate the effects of an online health education lecture on the positive screening rate of attention-deficit/hyperactivity disorder (ADHD) and parenting stress among parents of children diagnosed with or screened positive for ADHD.

### **Method**:

Using stratified proportional random cluster sampling, 14 primary schools in Chongqing were selected to conduct an online lecture about ADHD for parents and teachers. A total of 2,611 questionnaires were collected (1,508 intervention group, 1,103 control group).

### **Discussion**:

A total of 2,611 questionnaires were collected (1,508 in the intervention group, 1,103 in the control group). Statistical analysis mainly included generalized linear mixed models. The lecture did not significantly affect the positive screening rate of ADHD (parents: $\beta$=-0.37, p=0.208; teachers: $\beta$=0.53, p=0.338); however, the positive screening rate increased post-intervention. The intervention did not affect parenting stress (Z=-1.413, p=0.158).

### **Conclusion**:

Questionnaires completed during the survey process may have served the purpose of health communication. However, the effects of online health education were relatively weak. Multiple methods should be employed to promote knowledge dissemination in future ADHD-related health education interventions. Additionally, when conducting questionnaire assessments, the individual characteristics of parents and teachers should be considered.

### **Do you have any conflicts of interest?**

No

**P-06-002**

**A semiologic representation the graphic organisation of neurodevelopment disorders from chapter 6 of ICD-11 and DSM-V in children and adolescents | ID #477**

Abstract Submitter: Vanessa Douet Vannucci

Co-Authors: Martin Forestier, Yanice Guigou, Lucie Isolline Pisella

## **Object**:

The visualization of the psychiatric semiology makes it easier to analyse an individual as a network of diagnostic criteria whose interactions can compensate each other and determine a pathological, at-risk or healthy impact. A spatial organisation for the child and adolescent psychiatry semiology, means that diagnostic criteria can be ordered over time, prioritised, disseminated more easily and, ultimately, their emergence can be predicted.

## **Method**:

The symptoms have been grouped according to a hierarchy in semiological and symptomatological terms found in the main reference manuals and in the didactic consensus reported in the latest international reviews, based on 4 major domains: cognition, emotion, behaviour and motor skills.

## **Discussion**:

On this basis, also described by Micoulaud-Franchi et al, 2024, the various operational diagnostic criteria are organised according to a multiscalar hierarchy with a notion of order imagined in a circular tree structure: the ‘sunburst’.

## **Conclusion**:

A graphic, visual, dynamic and hierarchical organisation is proposed to handle more easily all the semiological terms used in children, adolescents and young adults (aged 6 to 25) and to convey them to the parties involved. Far from being exhaustive, this visual representation aims to facilitate the use of psychiatric semiology while maintaining a critical, dynamic and evolving approach to scientific knowledge and clinical practice.

## **Do you have any conflicts of interest?**

No

Y.G., M.F., and L.I.P. are employees of O-Kidia, and V.D.V. has stock and ownership interest in O-Kidia. The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential

**P-06-003**

**Preliminary results of the EPIDIA4Kids study on brain functioning in children: Multidimensional ADHD-related symptomatology screening using multimodality biometry | ID #476**

Abstract Submitter: Vanessa Douet Vannucci

Co-Authors: Yanice Guigou, Lucie Isoline Pisella, Pascal Staccini

## **Object**:

Attention-deficit hyperactivity disorder occurs in 5% of youth, impacting health and social conditions. Currently, early diagnosis is constrained by clinical complexity and limited resources of professionals to conduct evaluations. Scalable methods for ADHD-screening are thus needed. Biometry have shown reflecting brain dysfunctioning in ADHD-individuals. However, biometry as ADHD-screening tool via a multimodal tech-system is still unknown.

## **Method**:

Eighty-one children aged 7 to 12 years performed gamified tasks on an unmodified tablet using the XAI4Kids® multimodal system that allow extraction of biometrics (eye-, digit- and emotion-tracking), from video and touch events using machine learning. Neuropsychological assessments and questionnaires were administered to provide ADHD-related measures. Each ADHD-related measure was evaluated with each biometric using linear mixed-effect models.

## **Discussion**:

Two digit-tracking features had an age- and sex-effect ($p<0.001$) among biometrics in contrast to neuro-assessments. Biometric constructs were predictors of working memory ($p<0.0001$) and processing speed ($p<0.0001$), and to lower extent of visuospatial skills ($p=0.003$), inattention ($p=0.04$), or achievement ($p=0.04$) where multi-modalities being crucial to capture several symptomatology dimensions.

## **Conclusion**:

Preliminary results showed that multimodal biometry gathered from an unmodified tablet in children, can provide a comprehensive transdiagnostic picture of individuals with ADHD-symptomatology, aligning with current evidence for comorbid presentations. Such screening system could also improve accessibility to specialized professionals. However, larger populations will be needed for further validation and generalization.

## **Do you have any conflicts of interest?**

No

**P-06-004**

**Do difficulties with concentration, hyperactivity, and impulsive behaviour always lead to a diagnosis of ADHD? | ID #185**

Abstract Submitter: Virginie Fouarge

Co-Authors: Xenia Colpaert, Eva Cloet

**Object**:

International literature suggests an overdiagnosis of ADHD. In Belgium, children's consumption of ADHD medication has increased. To diagnose ADHD, an evaluation of the child in all developmental areas and its functioning in different social contexts is needed. Referrers are not always able to differentiate ADHD and other developmental disorders. This research aims to evaluate the adequacy of external referrals of children suspected of ADHD.

**Method**:

Retrospective analysis of the reports of children aged 6–18 years suspected of ADHD, who passed a diagnostic evaluation in the Universitair Ziekenhuis Brussel in 2023, will be performed on behalf of developmental profile, diagnoses set, and comorbidities. Results will be analyzed using descriptive statistics.

**Discussion**:

Results will include the analysis of diagnostic profiles of children referred because ADHD is suspected (with/without other developmental problems) including diagnosis (ADHD and/or other developmental disorders), comorbidities, and main functional difficulties.

**Conclusion**:

The expected bias between referrals for suspected ADHD and diagnosis of ADHD, leads to the hypothesis that children do not always get the support needed when a qualitative and multidisciplinary diagnostic evaluation has not been performed yet. To optimize referrals, this research underlines the importance of sharing knowledge on the broad spectrum of developmental disorders with referrers.

**Do you have any conflicts of interest?**

No

**P-06-005**

**Development and preliminary validation of a brief questionnaire focused on assessing and understanding disruptive behavior, reactivity, and emotion/mood dysregulation in youth (AUDREY) | ID #25**

Abstract Submitter: Paulo Graziano

Co-Authors: Melissa Hernandez, Madeline Curzon, Margaret Johansson, Eva Goldhagen, Leanett Reinoso

**Object**:

To develop and initially validate a brief scale focused on assessing and understanding disruptive behavior, reactivity, and emotion/mood dysregulation in youth (AUDREY) that maps onto the DSM-5 criteria for disruptive mood dysregulation disorder (DMDD).

**Method**:

Participants for this study included 139 children (67% boys; Mage = 8.51 years; 81% Latino) recruited from a longitudinal study in which a diagnostic assessment was completed when children were between 4-6 yrs old. Forty-three percent of the sample met criteria for ADHD and a Disruptive Behavior Disorder (DBD). The 17-item AUDREY questionnaire was administered to both children and their parents with re-administration occurring between 2-6 weeks.

**Discussion**:

The internal consistency of the AUDREY was excellent (parent α's = .85-.93; child-report α's =.81-.88) along with excellent to adequate test-retest reliability (ICC's = .86-.90 for parent & .55 to .64 for child). Good concurrent validity was shown as the scores of both versions of the AUDREY were significantly correlated with established scales measuring emotion dysregulation, even after controlling for ADHD & ODD symptoms (r's = .20-.62).

**Conclusion**:

Children who met DSM-5 criteria for DMDD on the AUDREY had greater emotional difficulties above and beyond ADHD and ODD sx (Cohen's d=0.57-0.72). Relative to typically developing children, only the combination of ADHD+DBD in early childhood predicted later DMDD dx (odds ratio of 23.07 [2.95, 180.53], p=.003). Findings highlight the feasibility and initial promise of the AUDREY as a brief scale measuring DMDD sx within a pediatric ADHD sample.

**Do you have any conflicts of interest?**

No

**P-06-006**

**iPad-based tool for assessing executive function and processing speed in adolescents with ADHD | ID #421**

Abstract Submitter: Anne Gulsrud

Co-Authors: Ingvild Haugen, Agnete Dyresen, Jan Stubberud, Krister Fjermestad, Lars Tjelta Westlye, Dag Alnæs, Merete Glenne Øie

### **Object**:

Executive dysfunction and processing speed impairments are core challenges in ADHD, impacting organization, impulsivity, and task completion. This study assesses the effectiveness of the Cognitive Assessment at Bedside for iPAD (CABPad) in detecting such impairments in adolescents with ADHD. Originally for post-stroke cognitive screening, CABPad could also offer a standardized, efficient, and user-friendly assessment for ADHD-related dysfunction.

### **Method**:

In the ongoing randomized controlled trial ADHD Effect (NCT05874791), 105 adolescents aged 12-18 years with ADHD completed the CABPad tests assessing attention span, working memory, inhibition, and processing speed in approximately 10 minutes. Average scores by age group were compared to 564 peers from a population-based convenience sample in the ongoing BRAINMINT study, using a two-sample t-test.

### **Discussion**:

Preliminary findings show that ADHD participants performed significantly worse than controls, with impairments in attention span, working memory, inhibition, and processing speed. These results suggest that CABPad is an efficient, user-friendly tool for assessing executive dysfunction and processing speed in ADHD. This may have implications for clinical practice, offering a simple, time-efficient method for evaluating these functions.

### **Conclusion**:

CABPad shows promise as a standardized assessment for executive dysfunction and processing speed difficulties in adolescents with ADHD. Further research may establish its role in offering an accessible way to identify cognitive challenges and support effective management strategies.

### **Do you have any conflicts of interest?**

No

**P-06-007**

**Translation and cultural adaptation of the vanderbilt ADHD diagnostic rating scale into Georgian: A first step toward enhanced ADHD diagnosis in Georgia | ID #133**

Abstract Submitter: Ana Makharashvili

Co-Authors: Renato Polimanti

### **Object**:

Georgia has been slow to recognize ADHD, with the condition only gaining attention in the past decade. The absence of officially translated, validated diagnostic tools hampers proper diagnostic protocols in the country. ADHD is highly prevalent and impactful, affecting individuals across age groups. The Vanderbilt ADHD Diagnostic Rating Scale is a reliable, evidence-based tool crucial for accurate diagnosis and effective intervention in children.

### **Method**:

Permission was obtained from Dr. Mark L. Wolraich, author of the Vanderbilt ADHD Diagnostic Rating Scale (VADRS), University of Oklahoma Health Sciences Center. The translation process, led by Yale University, included forward and backward translation, cultural adaptation, and expert review. Ten participants, including doctors, psychologists, and psychiatrists fluent in both Georgian and English, ensured linguistic and contextual accuracy.

### **Discussion**:

This translation is crucial for Georgia, where a uniform ADHD diagnostic protocol is lacking. It will ensure accurate diagnosis, leading to timely management of the condition. The tool will be freely accessible and distributed nationwide through our organization, ADHD Georgia, founded with support from ADHD Iceland and ADHD Europe. This initiative aims to address the current ADHD challenges in the country and improve diagnostic practices.

### **Conclusion**:

In partnership with Tbilisi Medical Academy, Yale University, and ADHD Georgia, we aim to conduct a validation study testing the tool in practice. We will engage specialists in the field, gather feedback during tool usage, and make necessary adjustments. This will ensure the tool is both translated and validated for Georgian culture, pioneering ADHD diagnosis in Georgia and improving diagnostic accuracy for this underserved population.

### **Do you have any conflicts of interest?**

No

**P-06-008**

**The Child Health Integrated Response Pathway (CHIRP) and implementing an objective psychometric tool: QbCheck. improving ADHD pathway efficiency in the Bay of Plenty, New Zealand | ID #71**

Abstract Submitter: Sarah Moll

Co-Authors: Kim Blair, Haidee Barrow, Chloe Malone, Chris Frampton, Anja Theron

### **Object**:

The CHIRP model(combining paediatrics, child-development-services&child-and-adolescent mental-health)came into effect in 2022,creating a single point of entry and information gathering for neurodevelopmental concerns.Previously,our ADHD assessments lacked objective evidence,relying heavily on subjective reports that may be incomplete,invalid or discrepant.As ADHD referrals surge,we've incorporated QbCheck as an objective measure of ADHD symptoms.

### **Method**:

After implementing CHIRP, QbCheck was registered in New Zealand(NZ) and implemented in July 2023. Now all children referred for ADHD evaluation undergo an initial QbCheck assessment. Evaluation of the revised pathway of 50 children(aged 0-16y) includes metrics such as time to diagnosis, clinic appointments, and representation of Maori ethnicity(known inequities in health experience and outcomes are observed for Māori ethnicity in NZ).

### **Discussion**:

Since CHIRP's introduction, diagnostic conclusions at first specialist appointments rose significantly from 10% to 62%, reaching 82% with QbCheck. Clinic visits dropped from three to one, easing family burdens. While CHIRP minimally changed diagnostic rates (82% to 86%), QbCheck significantly reduced them to 70%.  An increase in Maori referrals has led to a more expected representation within our population.

### **Conclusion**:

Incorporating CHIRP and QbCheck into our ADHD assessments has significantly improved our equity of access and efficiency with reduced waiting times and appointment numbers for families. The addition of QbCheck has also significantly reduced our diagnostic rates for ADHD which may suggest previous misdiagnosis of patients.

### **Do you have any conflicts of interest?**

No

**P-06-009**

**A systematic review of ecological momentary assessment studies on ADHD | ID #408**

Abstract Submitter: Alexandra Nistor

Co-Authors: Costina-Ruxandra Poetar , #REF! #REF!

**Object**:

The aim of the present study is to systematically review the use EMA in monitoring ADHD symptoms and its potential role in improving intervention outcomes.

**Method**:

Systematic searches were conducted in PubMed, Scopus, and Web of Science using terms such as "Ecological Momentary Assessment" and "ADHD" " Inclusion criteria for studies": research published in English. Empirical studies utilizing EMA to assess symptoms of ADHD, such as inattention, impulsivity, and hyperactivity, as well as externalizing behaviors. Systematic reviews, theoretical articles, and studies lacking empirical data were excluded.

**Discussion**:

Preliminary insights suggest that EMA enhances the understanding of ADHD symptom variability and contextual triggers, enabling more personalized and adaptive approaches.

**Conclusion**:

By synthesizing available data, this study aims to provide a comprehensive review of EMA's role in ADHD and related disorders, offering valuable insights for future research and clinical implementation.

**Do you have any conflicts of interest?**

No

**P-06-011**

**The utility of the QbTest as a diagnostic aid in a specialist ADHD service: A retrospective chart review | ID #322**

Abstract Submitter: Declan Quinn

Co-Authors: Jane Mcgrath, Robert Whelan, Sean O'Leary, Matthew Shipsey, Sharon Ryan, Madelein Groom

### **Object**:

The QbTest is an objective tool for ADHD diagnosis but shows only moderate sensitivity and specificity. While its diagnostic utility is debated, some research suggests it may predict medication response. This study aims to evaluate the QbTest's ability to 1) distinguish between individuals with and without ADHD in a specialist ADHD clinic and 2) predict medication response.

### **Method**:

Data for this study was collected through a retrospective chart review of 83 cases in a child and adolescent ADHD clinic, who followed a standardised, evidence-based pathway (McGrath, 2024). QbTest metrics were compared between those with and without an ADHD diagnosis Logistic regression assessed whether QbTest scores predicted clinician diagnosis, and multiple regression evaluated treatment response using QbTest parameters and age.

### **Discussion**:

No significant differences were found on any QbTest parameters (all $p > .05$). The logistic regression model was not significant ($\chi^2(4) = 2.72$, $p = .61$). The QbTest showed a positive predictive value of .92, negative predictive value of .25, sensitivity of .75, specificity of .54, and balanced accuracy of .65. QbImpulsivity scores alone significantly predicted clinician-rated treatment response at 8 weeks ($R^2 = .15$, $F(1) = 8.27$, $p < .01$).

### **Conclusion**:

In a specialized ADHD clinic, the QbTest demonstrated limited discriminative ability when compared to gold-standard clinician judgement. Despite increasing popularity, the results of this study add weight to an existing body of literature that suggests that the QbTest has limited diagnostic capabilities in a specialized ADHD setting, though this study extends upon previous research suggesting potential of QbTest in predicting stimulant response.

### **Do you have any conflicts of interest?**

No

**P-06-012**

**Examining the ability of the hyperactivity/inattention subscale of the self-reported strengths and difficulties questionnaire to identify adolescents with a recorded ADHD diagnosis | ID #394**

Abstract Submitter: Abbey Rowe

Co-Authors: Kate Langley, Graham Moore, Anita Thapar, Harshal Lohakare, Ann John, Amanda Marchant

### **Object**:

The aim of this nationwide e-cohort study was to investigate the convergence between high scores on the hyperactivity/inattention subscale of the self-reported Strengths and Difficulties Questionnaire (SDQ-HI) and recorded ADHD diagnoses in adolescents. The study used data from the Welsh Secure Anonymised Information Linkage (SAIL) Databank.

### **Method**:

Recorded ADHD diagnoses were derived from routinely collected healthcare data and linked at a person level to self-reported SDQ and demographic data collected by the School Health Research Network's 2019 school survey. Area Under the Curve (AUC) values were estimated to investigate the ability of the SDQ-HI to identify adolescents with an ADHD diagnosis. Optimum SDQ-HI cut-points for identifying ADHD diagnosis were further explored.

### **Discussion**:

The final sample included 23,367 adolescents (aged 11-16) from 138 secondary schools across Wales, UK. 1.79% (n=420) had an ADHD diagnosis (2.75% of males, 0.89% of females). 39.76% of those with ADHD, and 11.58% of those without, scored 'very high' (≥8) on the SDQ-HI. The AUC = 0.74 (95% CI=0.70-0.75) which is considered fair. The optimum cut-point was ≥6 (sensitivity=65.2%, specificity=69.8%, YI=0.35), which included 30.87% of the whole sample.

### **Conclusion**:

Results suggest there is only a fair convergence between self-reported SDQ-HI scores and recorded ADHD diagnosis in adolescents in Wales, with the optimum cut-point picking up a large proportion of the sample. It is recommended that caution should be taken when using the self-report SDQ-HI in research to distinguish between adolescents with and without ADHD in a community sample.

### **Do you have any conflicts of interest?**

No

NA

**P-06-013**

**ADHD identification based on video game performance | ID #470**

Abstract Submitter: David Delgado-Gomez

Co-Authors: Lucía Caselles-Pina, Alejandro Quesada-López, Eva María Garzón-Hernández

**Object**:

The objective of this study is to determine whether the performance shown in video games by children and adolescents can be used for the early identification of ADHD.

**Method**:

In this study, 23 six-year-old children without a prior ADHD diagnosis played four mini-games designed to assess dyscalculia, selective attention, and sustained attention. For each task, the number of correct responses and the average response time were recorded. Outliers in the collected data were identified using boxplots.

**Discussion**:

Results showed that one child exhibited outlier values in 2 of the 4 games. Later, we were informed that this child was undergoing evaluation for ADHD, which was subsequently confirmed. Another child also displayed outliers in 2 games; although he/she has not been formally evaluated, their teachers reported symptoms consistent with ADHD. Finally, a third child showed a marginally atypical performance in 1 game. This child was identified as gifted

**Conclusion**:

While these findings should be interpreted with caution due to the limited sample size, they suggest that well-designed video games can be useful tools for the early detection of ADHD.

**Do you have any conflicts of interest?**

No

None

**P-07-001**

**ADHD symptoms, cyclothymic temperament, and their associated impairments across adulthood: A cross-sectional study | ID #293**

Abstract Submitter: André Høberg

Co-Authors: Amalie Austgulen, Lisa Østrådt-Jennings, Astri J. Lundervold, Berit Skretting Solberg, Tor-Arne Hegvik, Jan Haavik

**Object**:

Cyclothymic temperament (CT) is common in ADHD and may contribute to impairment. While research has shown associations between CT, ADHD, and comorbid psychiatric symptoms, the trajectory of these characteristics through adulthood is poorly understood. This study examines how ADHD and CT manifest across adulthood and evaluates their contributions to functional outcomes, including psychiatric comorbidity, unemployment, and life satisfaction.

**Method**:

A cohort of 818 adults (18-75 years) with ADHD reported current and childhood ADHD symptoms and CT. Linear regression models were computed with symptom domains and CT as outcomes and age and sex as predictors. Hierarchical regression models with unemployment, history of anxiety/depression, and life satisfaction as outcomes and symptoms of inattention, hyperactivity, and CT as predictors were compared by model fit and Likelihood Ratio tests.

**Discussion**:

Females reported higher current ADHD symptoms and older participants reported lower childhood ADHD symptoms and CT. While ADHD symptoms and CT were associated with all impairments, inattention most strongly predicted current unemployment and low satisfaction with life. CT showed the strongest association with a history of anxiety/depression but provided no explanatory power beyond ADHD symptoms for predicting unemployment or life satisfaction.

**Conclusion**:

Our findings indicate that while ADHD symptoms are stable across age groups, CT tends to decrease with age. CT explained the greatest part of the variance in psychiatric comorbidity, suggesting that emotional dysregulation characterizes adults with ADHD with more severe psychiatric comorbidity. However, inattention and hyperactivity were more impairing in other life domains.

**Do you have any conflicts of interest?**

No

**P-07-002**

**Understanding the mechanistic links between neurodevelopmental traits and internalising problems: The mediating roles of intolerance of uncertainty and negative problem orientation | ID #145**

Abstract Submitter: Luca Hargitai

Co-Authors: Lucy Waldren, Ross Robinson, Florence Leung, Lucy Livingston, Punit Shah

**Object**:

Attention deficit hyperactivity disorder (ADHD) and autism have both consistently been linked to internalising problems like anxiety and depression. However, the mechanisms that underpin these associations are unclear, especially in adults. To fill this research gap, we investigated two theoretically relevant dispositional characteristics that may explain these relationships: intolerance of uncertainty (IU) and negative problem orientation (NPO).

**Method**:

We recruited a large (n=504), nationally representative sample of adults from the United Kingdom using Prolific. Participants provided basic demographic information and completed self-report measures of ADHD traits, autistic traits, internalising (depression and anxiety) symptoms, IU and NPO. Using parallel mediation analyses, we examined the roles of IU and NPO in the associations of ADHD and autistic traits with internalising symptoms.

**Discussion**:

We found that, together, IU and NPO fully mediated the association between autistic traits and internalising symptoms whilst accounting for participants' ADHD traits, age, sex and education level. Interestingly, these two dispositional characteristics only partially mediated the link between ADHD traits and internalising symptoms, suggesting that additional factors not captured by the mediation model may contribute to this positive relationship.

**Conclusion**:

We conclude that a person's perception of their capacity to tolerate uncertain or ambiguous situations and their views on their (in)ability to effectively solve problems in their day-to-day lives may underpin the strong association between autism and internalising problems and, to a lesser extent, between ADHD and internalising problems.

**Do you have any conflicts of interest?**

No

**P-07-003**

**Analyzing the association between social anxiety and ADHD symptoms: A predictive and correlational study | ID #475**

Abstract Submitter: Ben Kneubuehler


## **Object**:

Using the Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS), this study examines whether social anxiety and ADHD symptoms specifically, impulsivity, hyperactivity, and inattentions are substantially correlated, and whether there is an effect of social anxiety scales to ADHD. Beyond demographic factors, we investigate whether ADHD predicts the intensity of social anxiety.

## **Method**:

Study collected 253 participants (151 men and 129 women) filled out validated self-report questionnaires such as the SPS, SIAS, and ADHD-SB. Pearson correlations looked at how social anxiety and ADHD subscales related to each other, and multiple regression analyses looked at whether ADHD symptoms predicted SIAS and SPS scores after adjusting for age and gender.

## **Discussion**:

100 people from 253 reached the SIAS threshold, 77 people from 254 reached the SPS threshold. Higher impulsivity may be associated with slightly reduced social anxiety, as seen by the tiny but significant negative connection between impulsivity and SIAS, no other correlation was found. On the other hand, social anxiety was significantly influenced by age and gender, with women and younger people reporting higher SIAS and SPS scores ($p < .01$).

## **Conclusion**:

Social Anxiety is more common in an ADHD sample than in the general population. There is no significant correlation between social anxiety and ADHD symptoms, beside a slightly negative correlation between social interaction anxiety and impulsivity. Rather, demographic variables like gender and age are more important in estimating the degree of social anxiety.


## **Do you have any conflicts of interest?**

No

**P-07-004**

**Exploring sleep in adult ADHD: Polysomnographic and subjective findings and their links to symptom severity and psychiatric comorbidities | ID #363**

Abstract Submitter: Solveig Menrad

Co-Authors: Erika Künstler, Torsten Schultze, Heiko Schneider, Sven Rupprecht

### **Object**:

Given the high prevalence of sleep complaints among adults with ADHD and the limited polysomnographic evidence available (Díaz-Román et al., 2018), this study aimed to investigate differences in polysomnographic and subjective sleep measures in adults with and without ADHD, and their relationship to ADHD symptom severity, anxiety and depressive symptoms.

### **Method**:

35 unmedicated adults with ADHD and 37 healthy controls underwent one night of polysomnography. Sleep complaints, anxiety, depression, and ADHD symptom severity were measured using questionnaires and a structured interview. One-way MANOVAs with post-hoc ANOVAs were conducted to determine sleep differences between groups. Spearman's correlations were used to investigate associations between sleep measures, ADHD severity, anxiety and depression.

### **Discussion**:

MANOVAs showed no significant differences in polysomnographic measures between adults with ADHD and controls, but significant differences in subjective sleep measures ($F(8,61)=27.129$, $p<.001$), specifically in subjective reports on sleep quality, efficiency, latency, total sleep time, daytime sleepiness, insomnia and Restless Legs symptoms. No significant correlations between sleep measures and ADHD severity, anxiety or depression were found.

### **Conclusion**:

Adults with ADHD reported poor subjective sleep quality, not reflected in macrostructural polysomnographic data. Investigating sleep microstructure and phenotypes might shed light on this discrepancy. Although no significant associations between sleep measures and ADHD severity or psychiatric comorbidities were observed, exploring these links could inform bidirectional treatment options and understanding of the psychopathology of ADHD in adults.

### **Do you have any conflicts of interest?**

No

I do not have any conflict of interest.

**P-07-005**

**Perceived stress, self-efficacy and mindfulness mediate the relationship between ADHD symptoms and anxiety/depression in adult ADHD | ID #401**

Abstract Submitter: Shan Qu

Co-Authors: Shiyu Zhang, Xinxin Shi

**Object**:

Adult attention-deficit/hyperactivity disorder (ADHD) is often associated with other psychiatric disorders. ADHD is associated with impaired Perceived Stress,Self-efficacy and anxiety/depressive symptoms. We aimed to investigate correlations among these variables and to build a mediation model for exploring the mechanisms between adult ADHD and anxiety/depressive symptoms in adult ADHD with and without comorbidities, respectively.

**Method**:

139 adults diagnosed with ADHD completed a set of tests that included a sociodemographic form as well as the Adult ADHD Severity Rating Scale, Generalized Anxiety Disorder-7,Patient Health Questionnaire-9 , Perceived Stress Scale, General Self-Efficacy Scale, and Freiburg Mindfulness Inventory after the diagnostic examination according to the Structured Clinical Interview for DSM-5–Clinician Version .

**Discussion**:

This was a cross-sectional study. Perceived stress, self-efficacy and mindfulness mediated ADHD symptoms and anxiety /depression symptoms in parallel multiple mediating effects.Self-efficacy and mindfulness can be used as a "protective factor" for ADHD to fight psychological stress. Coping with perceived stress, as well as improving self-efficacy and mindfulness, may be promising directions for treatment.

**Conclusion**:

There was a statistically significant correlation between the severity of ADHD symptoms and the severity of anxiety/depression, with correlation coefficients of 0.61 and 0.47 in adults with and without comorbidities, respectively. ADHD symptoms exhibited an association with the severity of anxiety and depression, mediated by increased Perceived Stress, as well as decreased Self-efficacy and mindfulness

**Do you have any conflicts of interest?**

No

**P-07-006**

**Maltreated ecophenotype in ADHD: Evidence for worse comorbid, but not ADHD symptoms or interpersonal problems, when considering confounding by mental health problems | ID #313**

Abstract Submitter: Kristóf Ágrez

Co-Authors: Nóra Bunford

## Object:

Childhood maltreatment (CM) is an established risk factor for mental disorders, and youth with Attention-Deficit/Hyperactivity Disorder (ADHD) are at increased risk for CM. It has been proposed that CM is associated with a distinct clinical and neurobiological profile, constituting an ecophenotype. We examined, for the first time in youth with ADHD, whether CM is associated with more severe ADHD and comorbid symptoms, and interpersonal problems.

## Method:

In N=588 youth with ADHD (M=10.05±2.70 years; 69.05% male; 55.44% White/Caucasian) from the Healthy Brain Network project, associations were tested using robust linear regression and generalized linear models. ADHD was assessed with Kiddie Schedule for Affective Disorders and Schizophrenia, CM (n=139) with Adverse Childhood Experiences Scale, and outcomes with Child Behavior Checklist (CBCL), Positive Behavior Scale and CBCL Social Problems.

## Discussion:

Across models, CM was associated with more severe ADHD, comorbid symptoms (Anxiety, Conduct, Depressive, and Oppositional Defiant Problems), and interpersonal problems, pFDRs<.017. Sensitivity analyses, however, revealed that CM remained significant only in models pertaining to comorbid symptoms: Anxiety (z=2.704, pFDR=.021), Conduct (z=2.427, pFDR=.034), Depressive (z=3.251, pFDR=.005), and Oppositional Defiant (t=5.281, pFDR<.001) Problems.

## Conclusion:

Findings suggest that CM is associated with more severe clinical presentation in terms of comorbidities, but less so with ADHD severity and interpersonal problems, when considering confounding by concurrent depressive and oppositional defiant problems as measured with the CBCL. These results provide partial support for the maltreated ecophenotype in ADHD, and highlight the importance of adjusting for co-occurring mental health problems.

## Do you have any conflicts of interest?

No

**P-07-007**

**Irritability works as a mediator between depression and hyperactivity in children with ADHD | ID #362**

Abstract Submitter: Jamile Noele De Andrade

Co-Authors: Daniele De Paula Da Silva, Mileny Cristiny Maria, Marco Aurélio Romano-Silva, Debora Marques De Miranda

## **Object**:

This study aims to investigate the effect of symptoms of Hyperactivity modeled by irritability and symptoms of depression in children diagnosed with ADHD.

## **Method**:

86 children selected from Child Psychiatry Service of Hospital das Clínicas at UFMG, aged 4-15 years (M= 9,45 SD=2.68). Consent was obtained from all participants following the ethical approval. To measure the symptoms we used SNAP-IV (Costa, 2018) assessed ADHD/ODD; ARI (Stringaris et al., 2012) measured irritability; and CABI (Costa, 2023) evaluated depression. Analyses were conducted in JASP (v.0.18.3).

## **Discussion**:

These findings suggest that intermediate scores may influence the relationship between hyperactivity and depressive symptoms. There is an indirect interaction between them ($p = 0.002$), mediated by irritability. The total effect of hyperactivity on depression symptoms is significant ($p < 0.001$). The results indicate that both responses in clinical settings show a positive association between hyperactivity and depressive symptoms.

## **Conclusion**:

The results highlight the indirect interaction between hyperactivity and depressive symptoms. This underscores irritability as a crucial mediator, suggesting that interventions targeting irritability could mitigate depressive symptoms linked to the presentation of clinical symptoms of hyperactivity in children with ADHD.

## **Do you have any conflicts of interest?**

No

There is no conflict of interest

**P-07-008**

**Predicting long-term treatment outcomes in youth with anxiety disorders: The role of externalising symptoms | ID #56**

Abstract Submitter: Agnete Dyresen

Co-Authors: Krister Westlye Fjermestad, Arne Kodal, Maj-Britt Posserudd, Merete Glenne Øie, Gro Janne Henningsen Wergeland

**Object**:

Externalizing symptoms such as attention-deficit/hyperactivity and oppositional/conduct problems are frequently observed in youth with anxiety disorders, yet their influence on the severity and progression of anxiety and depressive symptoms remains underexplored. This study explores how externalizing symptoms impact long-term treatment outcomes in youth diagnosed with anxiety disorders post-treatment.

**Method**:

We utilized data from a randomized controlled effectiveness trial with 179 participants who received cognitive behavioral therapy for anxiety disorders. Internalizing and externalizing symptoms were reported by youth and their parents at pre/post-treatment, and at 1- and 4-year follow-ups. Linear Mixed-Effects Models were used to examine the relationships between externalizing symptoms and the trajectories of internalizing symptoms over time.

**Discussion**:

Parent-reported attention/hyperactivity was a significant predictor of increased anxiety levels over the 4-year follow-up period ($p = 0.022$). Youth-reported oppositional/conduct problems significantly predicted youth-reported depressive symptoms ($p = 0.018$). Both parent-reported attention/hyperactivity difficulties ($p = 0.004$) and oppositional/conduct problems ($p = 0.001$) were significant predictors of depressive symptoms.

**Conclusion**:

Addressing externalizing symptoms early in treatment may be important to improving long-term outcomes for youth with anxiety disorders. Integrating strategies to manage externalizing symptoms into existing treatment frameworks could mitigate their impact on internalizing symptom severity and potentially enhance overall treatment effectiveness.

**Do you have any conflicts of interest?**

No

**P-07-009**

**Comorbid ADHD and disruptive behavior disorders: The role of executive functioning | ID #28**

Abstract Submitter: Margaret Johansson

Co-Authors: Melissa Hernandez, Madeline Curzon, Eva Goldhagen, Leanett Reinoso, Anthony Dick, Paulo Graziano

**Object**:

To explore how comorbidities associated with Attention-Deficit/Hyperactivity Disorder (ADHD) during the preschool period such as a Disruptive Behavior Disorder (DBD) and/or the presence of callous-unemotional behaviors (CU) relate to executive functioning (EF). Participants were 323 young children (68.7% boys; Mage = 5.47, SD = 0.77, 81.1% Latinx) with ADHD (n=46), ADHD+DBD(n=129), and typically developing (TD; n=148).

**Method**:

Parent and teacher ratings of ADHD, DBD symptoms, and CU were collected at baseline along with a multimodal assessment of EF which included four tasks and parent/teacher ratings. Univariate analyses of covariance (ANCOVAs) indicated that while children diagnosed with ADHD and ADHD+DBD have significantly worse EF deficits than TD children (Cohen's d's range from 0.34-2.35), they do not differ from each other.

**Discussion**:

Children diagnosed with ADHD+DBD and high levels of parent-rated CU were reported to have worse EF problems (parent-rated; $d = 0.42$, $p < .032$) but similar EF task performance compared to those diagnosed with ADHD+DBD and low levels of CU. Lastly, regression analyses showed that parent-/teacher-reported ADHD symptoms were the strongest predictors of EF deficits (task-based and parent/teacher reports; $\beta$ range from -0.43-1.00).

**Conclusion**:

Parent-reported CU also predicted EF across two tasks and parent-rated EF problems ($\beta$ range -0.15-0.16). Young children with ADHD have the most EF deficits, regardless of DBD comorbidity. However, the presence of CU does contribute to worse EF, even when accounting for ADHD and DBD symptomology. Future work should examine interventions for ADHD that target specific domains of EF for young children with comorbidities, particularly CU.

**Do you have any conflicts of interest?**

No

**P-07-010**

**Clinical and cognitive mediators underlying subsequent depression in individuals with ADHD: A developmental approach | ID #220**

Abstract Submitter: Egle Padaigaite-Gulbiniene

Co-Authors: Gemma Hammerton, Jon Heron, Olga Eyre, Giorgia Michelini, Alexandra Wilson-Newman, Clara Garavini, Thalia C. Eley, Anita Thapar, Lucy Riglin

### **Object**:

ADHD may lead to depression, but little is known about its underlying mechanisms. We will examine whether clinical (irritability and anxiety), cognitive-affective (response inhibition, working memory, sustained attention, and emotion recognition), and negative thought patterns (external locus of control and negative cognitive style) mediate ADHD and subsequent depression association and test whether these effects vary across development or sex.

### **Method**:

Analyses will be performed in the Avon Longitudinal Study of Parents and Children (ALSPAC; N = 14,541) and the Twins Early Development Study (TEDS; N = 16,810 twins). ADHD will be assessed using the Strengths and Difficulties Questionnaire (SDQ) hyperactivity/inattention subscale, while depression will be assessed using the short Mood and Feelings Questionnaire (sMFQ). Mediation analyses will be conducted using counterfactual mediation.

### **Discussion**:

The presented results will include the natural direct and indirect effects of ADHD on depression, as well as the proportion-mediated effects for all mediators combined and for individual categories of mediators (clinical, cognitive-affective, and negative thought patterns) for each developmental period (childhood, adolescence, and young adulthood). Sex differences will be examined by comparing the proportion mediated between sexes.

### **Conclusion**:

Previous research suggests that standard psychological interventions for depression may be less effective in children and young people with ADHD. By identifying clinical and cognitive mechanisms linking ADHD and depression, findings from this study have the potential to help identify targets for depression interventions tailored for individuals with ADHD.

### **Do you have any conflicts of interest?**

No

**P-07-011**

**An audit of psychiatric comorbidity in children with ADHD within a learning disability service | ID #223**

Abstract Submitter: Muniswamy Shashi Kiran

Co-Authors: Martha Laxton-Kane, Georgina Whetton, Melanie Alexander

### **Object**:

Children with Learning Disability are known to have higher likelihood of neurodevelopmental and psychiatric morbidity. This study is an audit that aims to examine for the presence of psychiatric comorbidity in children who are under the care of a Child and Adolescent Learning Disability service and have been assessed for diagnosis for ADHD.

### **Method**:

Children under the care of the Child LD service undergo a comprehensive assessment when there is the possibility of a neurodevelopmental comorbidity. This includes a neurodevelopmental history, family history, observation, use of rating scales and a descriptive school report. The assessment is multidisciplinary and includes a psychiatric assessment which includes questions drawn from the KSADS-PL to screen for psychiatric comorbidity.

### **Discussion**:

The audit indicated high levels of neurodevelopmental and psychiatric morbidity. Almost all the children assessed over a nine-month period between April 2024 to December 2024 had high anxiety overlay including separation anxiety, free-floating generalised anxiety, obsessive-compulsive phenomena and frequent occasions of autonomic arousal. Many children also had frequent occasions of low mood and emotional distress.

### **Conclusion**:

Psychiatric comorbidity in the form of anxiety and emotional distress seems to be a very high comorbidity in children with Learning Disability and ADHD. This has a significant impact on the wellbeing and quality of life of the children and their carers. Their LD often prevents them from articulating their emotional experiences. It is important to assess for emotional distress and develop instruments to assess comorbidity in these children.

### **Do you have any conflicts of interest?**

No

**P-08-002**

**The relationship among sensory processing, ADHD symptoms, autistic traits and oppositional defiant disorder manifestation in children with ADHD: The exploration based on network analyses | ID #198**

Abstract Submitter: Yuan Gao

Co-Authors: Jing Li, Wenchen Wang, Haimei Li, Qiujin Qian, Yufeng Wang, Lu Liu

**Object**:

To explore the relationship among sensory processing (SP), ADHD symptoms, Autistic traits (ATs), and oppositional defiant disorder (ODD) symptoms in a large sample size of children with ADHD using symptomatic network analyses.

**Method**:

A total of 2676 children with ADHD aging from 6 to 11 years were recruited from Peking University Sixth Hospital. All subjects were rated for the ADHD symptom severity using the ADHD Rating Scale, ODD symptoms using the related items in Children's Clinical Diagnostic Interview Scale, SP symptoms using Child Sensory Integration Scale and ATs using related items in CBCL. R 4.2.1 packages mgm, qgraph, bnlearn, etc. were used for network analysis.

**Discussion**:

SP is more closely connected with ATs than ADHD symptoms. ATs-Social symptoms had the top strength and bridge strength , followed by SP-hypersensory. SP was placed at a high position in the directed network, potentially driving lower nodes like ATs and ADHD items, while ODD items were isolated. ATs-Social also had a high position, directly connecting many other lower nodes. ADHD items were downstream, seemingly dependent on SP and ATs items.

**Conclusion**:

Sensory processing may be foundermental in the complex manifestation of children with ADHD, and especially in close relationship with the ATs profile. ATs-social might play an essential role of communication in this symptomatic network, and could be an important target for future intervention.

**Do you have any conflicts of interest?**

No

**P-08-003**

**Towards a better understanding of adverse life experiences in ADHD and autism | ID #153**

Abstract Submitter: Olujolagbe Layinka

Co-Authors: Punit Shah, Lucy A. Livingston

**Object**:

Adversity is associated with negative life outcomes, e.g., depression and heart disease, but may also confer adaptive strengths. Individuals with ADHD and/or Autism are over 2 times more likely to experience adversity, but little is known about the intricacies of these relationships. To fill these knowledge gaps, we investigated: specific types of adversities, why adversities may persist, and the impact of adversities in ADHD/autism.

**Method**:

Diagnosed or self-identified ADHD/autistic adults, aged 18+, living in the UK or USA, were recruited online. Participants completed an open-ended survey about their adverse life experiences, the role of ADHD and/or autism in these experiences, and any resulting strengths. Data were analysed using reflexive thematic analysis.

**Discussion**:

123 ADHD/autistic adults reported adversities were driven by Cognitive (e.g., disorganisation), Social (e.g., communication difficulties), Emotional (e.g., emotional dysregulation), and Sensory (e.g., noise overload) factors. Adversities fell into 2 major types (Marginalisation [e.g., neglect] and Mistreatment [e.g., abuse]), which resulted in Health (e.g., mental and physical health decline) and Strength (e.g., empathy and resilience) Outcomes.

**Conclusion**:

Difficulties across cognitive, social, emotional, and sensory domains must be carefully considered in neurodiverse populations to reduce the risk of adverse experiences. Our findings have the potential to inform support across a range of settings (e.g., school, home, workplace) that mitigate the risk and subsequent impact of adverse life experiences for individuals with ADHD and autism.

**Do you have any conflicts of interest?**

No

**P-08-004**

**The effect of autistic traits on creativity features in adults with ADHD | ID #264**

Abstract Submitter: Ningning Liu

Co-Authors: Zelin Mu, Alitanshunbuer Bau, Jiabin Liu, Xueyang Wang, Jiang Qiu, Jinhua Xu, Haimei Li, Qiujin Qian, Lu Liu

## **Object**:

The present study was to explored the potential influence of autistic traits (ATs) in adults with attention-deficit/hyperactivity disorder (ADHD).

## **Method**:

A total of 82 adults with ADHD and 71 healthy controls (HCs) were recruited for a group comparison of multidimensional creativity. We examined the impact of ASD traits on ADHD creativity from categorical and continuous perspectives. Finally, we investigated the imaging mechanisms through which ASD influences ADHD creativity, focusing on the DMN and ECN, which are related to creativity in the general population.

## **Discussion**:

Compared to HCs, ADHD shows significantly better divergent thinking and creative achievement with hyperactivity/impulsivity symptoms contributing more than inattention. Categorical comparisons between ADHDAT+ and ADHDAT-, along with dimensional analyses, indicated a negative influence of ATs on ADHD's creative achievement. However, imaging shows no ASD trait effect on ADHD's temporal and spatial characteristics of the DMN and FPN.

## **Conclusion**:

We found that ADHD symptoms, particularly hyperactivity/impulsivity, positively contributed to creativity, while ASD symptoms negatively impacted the creativity of individuals with ADHD. Notably, the underlying neural mechanisms may differ from those associated with creativity in the general population. This study may enhance our understanding of the creativity characteristics in ADHD patients with ASD and shed new light on their strengths.

## **Do you have any conflicts of interest?**

No

**P-08-006**

**Safety of rare sugar d-allulose in patients with autism sprectrum disorder with or without ADHD: A randomized double-blind placebo-controlled crossover trial | ID #251**

Abstract Submitter: Koyuru Kurane

Co-Authors: Monden Yukifumi, Makiko Mieno, Yusaku Iwasaki, Toshihiko Yada

## **Object**:

The core symptoms of autism spectrum disorders (ASD), such as deficits in social communication, create challenges in daily life. However, effective pharmacological treatments for this condition are currently unavailable. Previous animal studies indicate that D-allulose improves social communication in individuals with ASD. The primary aim of this study was to preliminarily assess the safety of D-allulose in ASD patients.

## **Method**:

A randomized double-blind placebo-controlled crossover trial (Japan Registry of Clinical Trials No. jRCT031180411) included 10 ASD patients aged 12 to 29 (4 patients with ADHD) who received either D-allulose or a placebo (D-glucose) for 4 weeks. This was followed by a washout period and crossover. D-allulose doses were determined by body weight. The patients were evaluated at baseline, 1 hour after intake, and 1 month after daily intake.

## **Discussion**:

There were no serious adverse events occurred during the four-week study, and no clinically significant changes were noted in the evaluations regarding the adverse effects of D-allulose.

## **Conclusion**:

The preliminary study indicated that D-allulose does not cause significant adverse effects in ASD patients.

## **Do you have any conflicts of interest?**

No

**P-09-001**

**Increased risk for ADHD treatment discontinuation in adolescents and young adults with ADHD and comorbid substance use disorder: A register based study | ID #357**

Abstract Submitter: Andrea Johansson Capusan

Co-Authors: Le Zhang, Zheng Chang

### **Object**:

Pharmacological treatment in ADHD is efficient although retention to treatment is in general low. Medication in ADHD patients with comorbid SUD may improve outcomes, but it is unknown how the comorbidity affects ADHD treatment discontinuation. Here we used Swedish national registers to explore the factors associated with treatment discontinuation and re-initiation in young people with ADHD and SUD compared to matched controls.

### **Method**:

Cases (n 9 283) included all adolescents and young adults in Sweden, between 1986-2020, with ADHD medication at the time of their first SUD event (diagnosis, treatment or SUD related criminality) while controls (n 46 401) had ADHD medication but no SUD. Using Cox models we compared treatment discontinuation within one year from SUD event and treatment re-initiation within one year from discontinuation in cases and corresponding time in controls.

### **Discussion**:

Comorbid SUD doubled the risk for ADHD treatment discontinuation in young people (hazard ratio, 95% confidence interval, 1.99, 1.92-2.07) when controlling for multiple relevant covariates. Subsequent SUD events further increased this risk (HR: 1.15, 1.04, 1.28). Male sex, adolescent or young adult age and SUD related criminality, were associated with increased risk for treatment discontinuation and lower likelihood for treatment reinitiation.

### **Conclusion**:

Results indicate lower access to treatment and less treatment continuity in patients with comorbid SUD and ADHD. Patients with ADHD and comorbid SUD with SUD related criminality were identified as particularly vulnerable for treatment discontinuation. Treatment providers need to consider the specific needs of young people with comorbid ADHD and SUD to improve treatment access.

### **Do you have any conflicts of interest?**

No

AJC has received speakers' fees and consultancy fees from Camurus, Indivior, dnepharma, Nordic Drugs, all outside the scope of the current project. The other two authors declare no conflict of interest.

**P-09-002**

**Advancing ADHD and substance use disorder management: A collaborative, evidence-based approach**

**| ID #422**

Abstract Submitter: Samuel Chang

Co-Authors: Andy Bickle, Amanda Davis, Emma Climie, Ghalib Ahmed, Jennifer Picado, Lila Amirali, Lindsay Nix, Maggie E Toplak, Martin Gignac, Stacey Espinet

**Object**:

CADDRA is a national non-profit dedicated to equipping medical and health professionals with advanced ADHD management strategies to optimize patient care. ADHD is highly prevalent in individuals with substance use disorders (SUDs), yet it remains underdiagnosed and undertreated. The ADHD and Substance Use Program (CASUP) aims to bridge this gap.

**Method**:

CASUP, a Health Canada-funded initiative, integrates: Expert Collaboration (350+ practitioners shaping guidelines), Lived Experience (200+ IWLE addressing real-world barriers), Evidence Synthesis (a decade of ADHD/SUD research), and Knowledge Translation (CME to enhance uptake/reduce stigma). Key components: educational modules (CME for professionals), case-based learning, practitioner-centered tools and patient psychoeducational resources.

**Discussion**:

Findings: 1) ADHD should be routinely assessed in individuals with SUD, and vice versa; 2) Untreated ADHD can lead to self-medication, exacerbating both conditions; 3) Integrated treatment of ADHD and SUD leads to better health outcomes; 4) ADHD medication does not increase substance use risk but supports recovery; 5) Stigma is a barrier—many IWLE report difficulty accessing ADHD treatment, impacting substance use reduction efforts.

**Conclusion**:

CASUP effectively integrates evidence, frontline expertise, and lived experience to enhance ADHD and related disorder management. This scalable CME model strengthens professional education, reduces stigma, and ultimately improves patient care and outcomes.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Member of an advisory board, commercial speaker's bureau, receive payment from and honoraria from non-profits.

**P-09-003**

**Longitudinal perspective on adolescent e-cigarette use: The role of child ADHD symptoms and parenting characteristics | ID #453**

Abstract Submitter: Fabiola Gonzalez-Mendez

Co-Authors: Maria C Velez-Pastrana, Amilcar Matos-Moreno, Roushanac Partovi, Kathleen M Roche

**Object**:

E-cigarettes appeal to lower-risk adolescents, who are less susceptible to smoking conventional cigarettes. Parenting characteristics and child ADHD symptoms predict conventional cigarette use. Their relationship with e-cigarette use is less well understood. Using longitudinal data, we examine the role of parenting characteristics and adolescent ADHD symptoms in predicting e-cigarette use initiation by Latino adolescents in the U.S.

**Method**:

We conducted a secondary analysis of data from Pathways to Health/ Caminos al Bienestar, a 9-wave longitudinal study of 547 US Latino adolescents and their mothers spanning more than 5 years. We estimated Cox Proportional Hazards models to examine the effect of parental control, warmth, autonomy support, and parent-child conflict and adolescents' externalizing symptoms (YSR scores) on e-cigarette use initiation.

**Discussion**:

We analyzed data from 209 adolescents who had not used e-cigarettes at baseline. Among them, 65 (31%) reported e-cigarette initiation at some time during the 3-year follow-up period. Cox Proportional Hazard models show that adolescents' externalizing ADHD symptoms significantly ($p < .001$) increase the risk of earlier onset of e-cigarette use. Parenting characteristics had non-significant effects.

**Conclusion**:

ADHD symptoms in adolescents increase their risk for earlier onset of e-cigarette use. Their parents' perceived characteristics such as parental control, warmth, autonomy support and parent-child conflict were not significant predictors of e-cigarette onset. We discuss clinical and research implications.

**Do you have any conflicts of interest?**

No

**P-09-004**

**Patterns of methylphenidate misuse and abuse in patients with dual diagnosis | ID #109**

Abstract Submitter: Pietro Domenico Gramuglia

Co-Authors: Stefania Chiappini

**Object**:

Methylphenidate (MPH), a central nervous system stimulant primarily prescribed for attention-deficit/hyperactivity disorder (ADHD), has seen increasing rates of misuse and abuse, particularly in patients with dual diagnosis. The heightened risk of dependence and adverse effects in these vulnerable populations warrants a systematic review to assess the prevalence and pattern of abuse/misuse of MPH.

**Method**:

A systematic review was conducted using both PubMed and Scopus databases. The search strategy used: (methylphenidate OR Ritalin OR Concerta) AND (abuse OR dependency OR addiction) AND (dual diagnosis OR comorbid psychiatric disorder AND substance use disorder). The systematic review was structured in accordance with the PRISMA guidelines and identified studies were assessed by title/abstract and full text screening against eligibility criteria.

**Discussion**:

Findings indicated that individuals with psychiatric disorders, particularly conduct disorder, mood disorder were more likely to misuse MPH. Co-occurring SUD significantly elevated the risk. Misuse involved higher doses than prescribed or using non-oral routes of administration. Adverse outcomes included heightened risk of gastrointestinal events, cardiovascular events, and exacerbation of psychiatric symptoms

**Conclusion**:

MPH misuse and abuse are significant concerns in patients with psychiatric disorders and SUD. Risk factors include impulsivity, history of substance abuse, and access to prescription stimulants. Integrated therapeutic approaches and stricter prescription monitoring are recommended to mitigate misuse risks

**Do you have any conflicts of interest?**

No

**P-09-005**

**Emotion dysregulation as a core transdiagnostic symptom in co-occurring substance use disorder and ADHD: A review | ID #352**

Abstract Submitter: Lisa Horstman

Co-Authors: Martine Hoogman, Arnt Schellekens

### **Object**:

Emotion dysregulation (ED), the use of maladaptive emotion regulation strategies or deficits in emotion regulation abilities [1], are seen in many psychiatric disorders. Despite evidence that ED is associated with ADHD [2] and addictive behaviors [3][4], the interplay of ED in individuals with comorbid addictions and ADHD is rarely considered. We aimed to explore the role of ED as a transdiagnostic mechanism in co-occurring addictions and ADHD.

### **Method**:

A literature search was conducted using PubMed, Web of Science, PsycInfo, EMBASE and Medline. Inclusion criteria consisted of a) empirical studies, b) Addiction sample with co-occurring ADHD symptomology compared to an addiction sample alone, c) use of a valid emotion regulation instrument.

### **Discussion**:

Nine articles met the inclusion criteria. Two studies examining SUDs, identified greater ED and more severe emotional problems in the comorbid group compared to those with SUD alone. However, two studies found no ED differences between the groups. Three out of five studies examining behavioural addictions (BA), concluded increased emotion dysregulation in the comorbid group.

### **Conclusion**:

The limited articles found through this literature search highlights the need for more research on ED in comorbid ADHD addictive disorders. Findings suggest higher ED in comorbid cases compared to single disorder cases, but findings are contradictory. The articles varied highly in their objectives, instruments used and samples with different addiction problems. We further discuss limitations, future study designs and ED treatment options.

### **Do you have any conflicts of interest?**

No

**P-09-006**

**The chaos of adolescence: ADHD and use of psychoactive substances | ID #368**

Abstract Submitter: Zrinka Cavar

Co-Authors: Andreja Radic, Lucija Sabljic, Snjezana Salamon

### **Object**:

The connection of ADHD, use of psychoactive substances (PS) and various risky behaviors are well known. Frequent development of comorbidities with dysfunctionality complicate treatment and outcomes. In the Service, treatment is planned according to the psychiatric indication with defined goals, carried out in multidisciplinary team, multimodal interventions and multisector cooperation with quarterly outcome assessment.

### **Method**:

To present the specifics and treatment of adolescents up to 18 years with ADHD in outpatient treatment of the Service for Mental Health and Addiction Prevention of the Andrija Stampar Teaching Public Health Institute during 2024.

### **Discussion**:

Out of the total number of 378 person up to 18 years of age, there were 23.38% with ADHD. Almost equally were referred by the court/social welfare, health service and parents for behavioral problems, use of PS and for psychological problems. The results of assessment were for almost 70% for substance use disorder (SUD) and psychological problems and for 55.38% conduct disorder. We will present the performed therapeutic interventions and outcomes.

### **Conclusion**:

In our clinical sample, ADHD diagnosis is often with several serious comorbidities which complicates treatment and worsens outcomes. The SUD and psychological problems are underrecognized as referral reason. It is necessary to implement preventive programs for children with ADHD with the aim of delaying the use of PS, prevents the development of comorbidities and functioning problems, and better treatment outcomes.

### **Do you have any conflicts of interest?**

No

not

**P-09-007**

**Preventing relapse and maintaining remission in those with co-occurring SUD and ADHD | ID #318**

Abstract Submitter: Scott Keel


## **Object**:

Incidence and prevalence of ADHD and (SUD) have been on a sharp increase. Stimulant medications are first-line therapy for ADHD and are extremely effective. Unfortunately, many clinicians avoid using stimulants in patients with co-occurring SUD. The objective of this study was to assess the relationship between the effectiveness of a patient's treatment of ADHD with stimulant medication and the ability to prevent regression of a patient's SUD

## **Method**:

A descriptive review of observations from an outpatient clinic in Richmond, Virginia that specializes in preventive medicine utilized patient health records, patient questionnaires, screening tools, drug screening reports, state prescription monitoring records, patient and family assessments.

## **Discussion**:

Roughly 25% of the 800 patients at the clinic were being treated for SUD. Of those with SUD, nearly 70% of them have a co-occurring ADHD diagnosis. Clinical observations noted that the effective treatment of ADHD with first-line stimulant medications, especially long-acting medications that utilize novel drug delivery systems, play a significant role in harm reduction and prevention of relapse of SUD.

## **Conclusion**:

Many with SUD have undiagnosed or poorly treated ADHD. Effectively treating ADHD symptoms with first-line therapies alongside SUD treatment is crucial. This can prevent SUD relapse and improve recovery outcomes. Increased screening and proper ADHD treatment with first-line stimulant medications that are long acting and utilize novel delivery systems are essential for successful SUD treatment in this population


## **Do you have any conflicts of interest?**

No

**P-09-008**

**ADHD severity in adults: Linking stress, sleep, hormonal factors, and subsequent behavioural and substance-based addictions | ID #385**

Abstract Submitter: Asad Raffi

Co-Authors: Umma Yasin, Inaiah Naeem

**Object**:

We aimed to investigate how ADHD severity, stress, poor sleep, hormonal factors correlate with behavioural addictions and multi-substance use in adults. We hypothesised that individuals exhibiting greater severity of ADHD alongside a combination of confounders such as lifestyle triggers would show significantly higher poly-substance use and addictive behaviours compared to those without these triggers.

**Method**:

This study explored how ADHD severity, as measured by the Brown (EF/A) scale, interrelates with poor sleep, stress and hormonal fluctuations, and how these combined factors contribute to both behavioural and substance-based addictions in adults. We hypothesised that increasing ADHD severity, combined with three lifestyle triggers (sleep, stress, hormones), would correlate with significantly higher rates of addictive behaviour and substance use.

**Discussion**:

Of 1319 participants, 53% reported using 3 or more substances, while 70% disclosed 3 or more behavioural addictions. 530 participants exhibited all 3 triggers (stress, sleep, and hormonal issues) along with moderate-to-severe ADHD. Alcohol (n=674), sugar (n=775), convenience/fast food (n=699), nicotine (n=456) and caffeine (n=608) were most common. Elevated stress, poor sleep and hormonal changes amplify ADHD symptoms and addiction.

**Conclusion**:

Adults presenting more severe ADHD, compounded by stress, sleep disruptions, and hormonal fluctuations, are at substantially increased risk of poly-addiction, including both behavioural and substance-based issues. Interventions should integrate ADHD management with stress reduction, sleep optimisation, and hormone-related support to mitigate the underlying contributors to impulsive, multi-addiction patterns.

**Do you have any conflicts of interest?**

No

None

**P-09-009**

**Substance use disorders in adults with ADHD presenting with externalizing and internalizing comorbidities | ID #390**

Abstract Submitter: Mario Rodrigues Louza Neto

Co-Authors: Carlos Alberto Salgado, Eduardo Vitola, Maria Eduarda Tavares, Daniel Amado, Bruna Santos Silva, Gustavo De Melo Andrade, Diego Luiz Rovaris, Eugenio Horácio Grevet, Claiton Henrique Bau

**Object**:

Externalizing mental disorders (EXT) are strongly associated with Substance Use Disorders (SUD), but the role of internalizing (INT) comorbidities remains complex and less well-defined. This study aims to determine whether INT alone, or in combination with EXT, are associated with different frequencies of SUD in a clinical sample of ADHD adults (n = 631) and a general population sample (n = 2,001).

**Method**:

Patients classified into four groups based on their comorbidities: (1) 'pure' ADHD; (2) ADHD-EXT alone: presence of oppositional defiant, conduct, and/or antisocial personality disorders; (3) ADHD-INT alone: presence of mood and/or anxiety disorders; and (4) ADHD-EXT-INT: presence of both EXT and INT disorders, including those with bipolar disorder. A similar grouping was applied to a general population sample. SUD diagnosed with DSM-5 criteria.

**Discussion**:

Significant associations were observed between the diagnostic categories and SUD in both the ADHD clinical sample and the general population sample. Post hoc analyses revealed that among individuals with 'pure' ADHD, ADHD-EXT, and ADHD-EXT-INT groups exhibited comparable frequencies of SUD, whereas the ADHD-INT group showed significantly lower rates of SUD. In the general population, the EXT-INT group had the highest frequency of SUD.

**Conclusion**:

The presence of INT disorders has markedly different clinical implications for SUD risk, depending on whether EXT comorbidities are also present. These findings underscore the importance of considering comorbidity profiles when evaluating SUD risk. Future steps include replicating these findings in an additional sample of 3,000 individuals from the Brazilian ADHD Network.

**Do you have any conflicts of interest?**

No

None

**P-10-001**

**The attentional processing in adults with ADHD on frustration task: Based on event-related potential study | ID #39**

Abstract Submitter: Shoou-Lian Hwang-Gu

Co-Authors: Yu-Jie Chen

**Object**:

Emotion dysregulation has been recognized as related to individuals with Attention-deficit/hyperactivity disorder (ADHD) and caused impairments in various domains of life activities. However, only a few research explored how emotion influences attention processing in high-risk ADHD adults. Therefore, this study aimed to examine the impact of frustration on attention processing through affective Posner tasks and assess via P3 and LPP components

**Method**:

Methods: The current study enrolled participants at Chang Gung Memorial Hospital and Chang Gung University. We used the K-SADS-E diagnostic interview and divided the participants into high-risk ADHD groups (n=25) or control groups (n=30) according to their diagnosis. We explored the group differences in behavior, P3, and LPP amplitude in the affective Posner task, which is composed of three blocks: Baseline, Contingency, and Frustration.

**Discussion**:

High-risk ADHD adults made more error responses than the control group in the frustration block, suggesting that high-risk adult ADHD increased impulsivity when emotional arousal and resulted in higher error rates. The Control group showed greater LPP amplitude than the high-risk ADHD group during the contingency block, indicating that the control group was more sensitive to rewards than high-risk ADHD adults.

**Conclusion**:

According to our findings, high-risk ADHD adults had more difficulty regulating their emotions, and they're more susceptible to frustrating situations. Therefore, promoting high-risk ADHD adults' emotion regulation strategies and helping them develop coping strategies in stressful situations may reduce emotional impulsivity and improve their adaptation.

**Do you have any conflicts of interest?**

No

**P-10-002**

**Characteristics of handwriting skills sEMG-based in children with ADHD students of different gender | ID #462**

Abstract Submitter: Ren Yuanchun

Co-Authors: Bi Xiaoyu

## **Object**:

Characteristics of Handwriting Skills sEMG-based in children with Attention Deficit Hyperactivity Disorder Students of Different Gender

## **Method**:

44 ADHD children and 43 normal children were recruited. Trignolab Wireless System, produced by DELSYS, was used to recorded the surface EMG data while the children writing the number of "0-9"、the letters of "A-Z" and "a-z" Using SPSS 25.0 software, a non-parametric Kruskal-Wallis test was used to compare differences in electromyographic data between male and female ADHD children and the normal control group.

## **Discussion**:

ADHD boys had significantly higher activation levels in the dominant-side triceps brachii, distal joint muscles, and non-dominant-side proximal joint muscles compared to normal boys. ADHD girls had significant differences in activation levels in various muscles compared to normal girls. ADHD boys also had higher activation levels in the dominant-side triceps brachii and bilateral proximal-distal muscle contribution rate compared to ADHD girls .

## **Conclusion**:

ADHD boys exhibit over-activation of proximal and distal muscle involved in handwriting, while ADHD girls have insufficient recruitment and poor control of proximal and distal muscles. Moreover, the recruitment of muscles involved in writing in ADHD girls is worse than that of ADHD boys.

## **Do you have any conflicts of interest?**

No

**P-10-003**

**Electrophysiological insights into working memory updating deficits in medication-naive young people with ADHD | ID #308**

Abstract Submitter: Clodagh Earley

Co-Authors: Alannah Smyth, Tom Farnan, Declan Quinn, Admire Clinic, Jane Mcgrath, Robert Whelan

**Object**:

Young people with attention-deficit/hyperactivity disorder (ADHD) often exhibit working memory (WM) deficits, however, the mechanism behind these deficits remain unclear. Research links the P300 component to WM updating. Prior ADHD studies have involved samples on wash-out periods and examined limited WM load conditions. This study explored the electrophysiological basis of WM updating in medication-naive young people with ADHD across WM loads.

**Method**:

Forty-one participants (21 medication-naive, clinician-diagnosed ADHD and 20 typically developing controls) aged 10-17, completed a visual n-back task across three load conditions (0-,1- 2-back) under 128-channel electroencephalography (EEG). Repeated measures ANOVAs were used to analyse group differences in reaction times, accuracy and P300 amplitude across WM loads and stimulus type, controlling for age.

**Discussion**:

Results: The ADHD group exhibited significantly reduced P300 amplitude across all load conditions ($p < .001$). However, the effect of WM load on P300 amplitude did not differ significantly between groups. Additionally, the ADHD group demonstrated slower RTs ($p= 0.002$) and lower accuracy ($p= 0.044$) rates across all load conditions compared to typically developing controls.

**Conclusion**:

This study replicated previous findings of reduced P300 amplitude and poorer performance in WM updating among young people with ADHD. However, we further found smaller P300 amplitudes in both no-load and high load WM conditions in ADHD. These results suggest differences in attentional allocation during the WM updating process in ADHD, potentially leading to difficulties in integrating new, relevant information into working memory.

**Do you have any conflicts of interest?**

No

**P-10-004**

**Later-stage processing deficits in medication-naive children and adolescents with ADHD | ID #303**

Abstract Submitter: Tom Farnan

Co-Authors: Clodagh Earley, Alannah Smyth, Admire Clinic, Jane Mcgrath, Robert Whelan

**Object**:

ADHD is characterised by impairments at multiple information processing stages.The most robust electrophysiological marker of target-detection impairments in ADHD is reduced amplitude of the P3 Event-Related Potential (ERP). This study extended previous findings of P3 differences by recruiting a sample of medication-naive young people with ADHD. Earlier ERP components (N1, P1 and P2) were investigated to explore fundamental deficits in attention.

**Method**:

53 subjects (10-17 years); 26 medication-naive, clinician-diagnosed with ADHD [16M, 10F, mean 14y9m, SD 26m]; 27 controls [15M, 12F, mean age 14y3m, SD 28m) completed an Oddball task under 128-channel EEG. ERP peak amplitudes and latencies were extracted from Cz, Pz and Oz electrode clusters. Reaction Time (RT), variation in RT and rates of omission and commission errors were analysed. Group effects were assessed, controlling for age and sex.

**Discussion**:

Young people with ADHD had lower P3b amplitudes vs Controls ($p=0.005$; ADHD: 9.15μV, SD 3.2; controls: 13μV, SD 5.5). No significant differences found for P1, N1, P2 amplitudes or latencies. ADHD participants had significantly longer RTs ($p<0.001$; ADHD: 577ms, SD 116ms; Controls 711ms, SD 161ms). No significant difference in RT variability. Higher omission error rates ($p=0.003$ ; ADHD: 0.129, SD 0.037; controls: 0.038, SD 0.075) for ADHD group.

**Conclusion**:

Young people with ADHD had reduced P3b amplitude, extending previous findings by including participants from a medication-naive, clinician-diagnosed sample. A lack of differences in earlier ERP components suggests that poorer behavioral performance is due to deficits in later processing stages (i.e., decision-making and response selection).

**Do you have any conflicts of interest?**

No

**P-10-005**

**The Impact of emotional dysregulation on CNS arousal regulation and response to treatment with psychostimulants in adults with ADHD | ID #81**

Abstract Submitter: Jue Huang

Co-Authors: Nicole Mauche, Maria Strauß

**Object**:

Up to 70% of individuals with ADHD in adulthood struggle with emotional regulation (ED). It is also unclear to what extent ED influences the response to psychostimulant treatment. Against this backdrop, the goal of our study was to examine the impact of ED on the severity of ADHD symptoms and CNS arousal regulation in the EEG as a predictive marker for treatment response in adults with ADHD.

**Method**:

The data from a predictive pharmacological EEG study were reanalyzed. ED was assessed using the emotional lability subscale of the CAARS. CNS arousal regulation was investigated using the computer-based algorithm VIGALL 2.1.

**Discussion**:

56 of the 115 participants had ED. ED led to more pronounced ADHD core symptoms, more depressive symptoms, more problems with interpersonal relationships, and a poorer quality of life. No differences were found in CNS arousal regulation or in the response to medication. However, there were indications that depressive symptoms, in addition to ED, affect CNS arousal regulation in the EEG.

**Conclusion**:

Our results suggest that including ED in the clinical diagnosis of ADHD could be beneficial. The use of EEG-based CNS arousal regulation as a diagnostic and predictive tool for ADHD with ED should be further investigated.

**Do you have any conflicts of interest?**

No

**P-10-006**

**Differences in quantitative EEG analysis between adult ADHD patients with and without emotional dysregulation | ID #83**

Abstract Submitter: Jue Huang

Co-Authors: Nicole Mauche, Niclas Zubrytzki, Maria Strauß

## **Object**:

ADHD in adults is defined by inattention, hyperactivity, and impulsivity, but 34–70% of individuals also experience emotional dysregulation (ED), which influences ADHD symptom severity and comorbidities. Despite its relevance, ED is often overlooked in clinical diagnostics. This study aimed to explore EEG power differences between adult ADHD subgroups with and without ED.

## **Method**:

103 ADHD patients, assessed between 2013 and 2023, were classified using latent class analysis (LCA) based on the Wender-Reimherr Interview (WRI). EEG data was analyzed in five 3-minute windows. A mixed ANOVA was performed to examine the effects of time and ED on EEG power.

## **Discussion**:

Both groups showed increased frontal beta power between time blocks 2 and 3. Central beta power remained stable, with the ADHD group showing higher central beta activity compared to the ADHD+ED group. ED significantly influenced central beta activity, but there were no time-related effects.

## **Conclusion**:

ED is associated with changes in EEG power, with lower beta activity in patients with ED, particularly in the central region. These results suggest that ED and temporal arousal changes may operate independently, emphasizing the need for incorporating ED in ADHD diagnosis and treatment, and suggesting EEG beta activity as a marker for specific ADHD subtypes.

## **Do you have any conflicts of interest?**

No

**P-10-007**

**EEG-based CNS arousal regulation in adult ADHD: Differences between subgroups with and without emotional dysregulation | ID #82**

Abstract Submitter: Jue Huang

Co-Authors: Martin Sander, Nicole Mauche, Maria Strauß

**Object**:

Studies indicate that 34–70% of adults with ADHD also experience emotional dysregulation (ED). ED appears to exacerbate ADHD severity and complexity, while also contributing to the emergence of comorbid conditions. Despite its impact, ED is rarely considered in clinical ADHD diagnostics. This study aims to examine differences in CNS arousal regulation, as measured by EEG, between adult ADHD subgroups with and without ED.

**Method**:

The study included 103 adults with ADHD, evaluated at a specialized outpatient clinic. Latent class analysis (LCA) using the Wender-Reimherr Interview (WRI) divided participants into ADHD and ADHD+ED subgroups based on response patterns. CNS Arousal Regulation was assessed using the VIGALL 2.1 algorithm. Descriptive statistics and non-parametric analyses examined relationships between symptom severity, brain arousal, and its regulation.

**Discussion**:

This study identified a significant proportion of patients with ED. Patients with ED demonstrated higher T-scores across all ADHD symptom domains, with statistically significant differences in inattention, emotional lability, and total ADHD symptom severity. While arousal curves were similar between groups, differences were not significant.

**Conclusion**:

The finding of this study highlights that ED and CNS arousal regulation are likely independent phenomena, as well as highlights the need for alternative assessment tool to evaluate ED effectively. Nevertheless, incorporating ED into the clinical assessment of ADHD remains essential for providing comprehensive treatment to affected individuals.

**Do you have any conflicts of interest?**

No

**P-10-008**

**Eye movement and fixation-related potentials reveal reading comprehension challenges in chinese adults with ADHD | ID #268**

Abstract Submitter: Pei Chun Chao

Co-Authors: Jou-An Chung, Jie-Li Tsai, Chia-Ying Lee

**Object**:

Reading comprehension in ADHD is affected by deficits in attention, inhibition, and working memory. ERP studies reveal that reading involves bottom-up decoding of words and top-down prediction based on context, marked respectively by word frequency and predictability effects on N400s. This study aims to uncover ADHD's cognitive deficits in reading comprehension by simultaneously recording eye movements and fixation-related potentials (EMFRPs).

**Method**:

The study enrolled 14 college students with ADHD and 47 without ADHD. EMFRP data were collected as they read 2504 words from twenty-two traditional Chinese articles. Linear mixed-effects models were applied to single-trial EMFRP data. The analysis examined the effects of word frequency and predictability for assessing bottom-up lexical retrieval and top-down contextual prediction, respectively.

**Discussion**:

The control group exhibited a significant frequency-by-predictability interaction (WF*WP) in N400s (375-475ms) at central-parietal sites, with decreased N400 amplitudes for infrequent words as predictability increased, suggesting efficient use of context cues to interpret unfamiliar words. The ADHD group, however, showed delayed and reduced WF*WP effects on N400s (450-550ms) in parietal regions, indicating more effortful reading comprehension.

**Conclusion**:

These findings suggest that the ADHD group struggles with contextual integration despite intact word decoding skills. Additionally, these variations in frequency-by-predictability interactions on N400s, detectable in individual EMFRP data, may serve as an indicator for distinguishing reading processes and evaluating ADHD-related reading abilities effectively.

**Do you have any conflicts of interest?**

No

**P-10-009**

**Effect of working memory load in natural sentence reading between ADHD subtypes: Evidence from the simultaneous recording of eye movements and fixation-related potentials**

**| ID #267**

Abstract Submitter: Jou An Chung

Co-Authors: Pei-Chun Chao, Jie-Li Tsai, Chia-Ying Lee

**Object**:

This study examined the effect of working memory (WM) load on reading Chinese Relative Clause (RC) among adults with ADHD-combined (ADHD-C), ADHD-Inattentive type (ADHD-I), and normal controls. Fifty-three adults with normal reading, fourteen ADHD-I, and nineteen ADHD-C read sentences while Eye-Movement (EM) and Fixation-Related ERPs (FRPs) were simultaneouslyrecorded. WM-load was manipulated by increasing the distance between head noun and gap.

**Method**:

RC is a clause embedded in a Subject-Verb-Object (SVO) to modify the object, for example, Subject (他/He) + Verb (想到/think of) + { RC: [GAP] RC verb(協助/help) + RC noun(居民/resident) + 的(RCmarker) + [Head noun] (志工/volunteer)}. The low WM-load condition comprises sentences with the simplest RC, while high WM-load condition includes a locative preposition (在社區/in the community) and an adverbial modifier (熱心/enthusiastically) before the RC verb.

**Discussion**:

Overall EM data revealed that ADHD-C exhibited the highest skipping-rate, reflecting inattentive symptom, and the greatest number of regressions, suggesting that poor inhibitory control hinders the ability to suppress irrelevant information. Data from normal control revealed that higher WM-load yielded higher rereereading rate($z=2.53$) and larger N400 in central-parietal region($p<.05$), reflecting integration difficulty in processing higher WM-load.

**Conclusion**:

While ADHD-I showed a reduced N400, ADHD-C adults showed a frontal-shifted N400($p<.05$). ADHD-C adults require frontal resources to compensate for their reading difficulty when WM-load increases. In sum, three groups reveal distinct WM effect on N400 and EM measures. Thus, EM patterns and FRPs may optimize the differential diagnosis.

**Do you have any conflicts of interest?**

No

**P-10-010**

**Behavioral, electromyographic and electrophysiological indicators of altered deviance detection and mind wandering in adult ADHD | ID #416**

Abstract Submitter: Sabine Leske

Co-Authors: Isak Elling August Støver, Anne-Kristin Solbakk, Tor Endestad, Julia Kam, Venke Grane

## **Object**:

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder often persisting into adulthood, characterized by executive and attentional deficits, including excessive mind wandering. We investigate behavioral, electromyographic (EMG) and electroencephalographic (EEG) correlates of sustained attention, deviance detection and the propensity to mind wander in adults with ADHD being off medication when examined.

## **Method**:

ADHD patients (n=17) were compared to healthy controls (n=17) matched on gender, age, and IQ. Participants performed an auditory oddball task (participant feedback: On- or Off-Task), which required continuous manual responses to standard and deviant tones, while EEG and EMG were measured. Sustained attentional control was examined with the Test of Variables of Attention (T.O.V.A.).

## **Discussion**:

ADHD patients reported significantly more mind wandering (Off-Task), and exhibited reduced deviance detection accuracy and more Off-Task impulsive responses compared to controls. They showed a significantly reduced deviant-standard P300, for both On- and Off-Task conditions, while showing no difference in their average muscle activity (EMG). For the T.O.V.A., patients had significantly more Commission Errors (false positives).

## **Conclusion**:

In comparison to controls, ADHD patients showed deteriorated behavioral performance, especially impulsive responses, in the T.O.V.A and the oddball task, as well as more episodes of mind wandering and reduced P300. Since the P300 group difference cannot be explained by differences in hand muscle activity, the attenuated P300 likely reflects impaired control of attentional resources allocated to the task and altered deviance detection.

## **Do you have any conflicts of interest?**

No

**P-10-011**

**Clinical utility of the P300 wave as a biomarker for methylphenidate response in adult patients with ADHD: First phase report | ID #378**

Abstract Submitter: Pedro Andres Moya Santibañez

Co-Authors: Patricicio Ruedi, Andrea Contreras, Francisca Coloma

## **Object**:

To evaluate the characteristics of the P300 wave in adult patients with high suspicion of ADHD prior to treatment and to assess its potential as a biomarker for predicting response to methylphenidate.

## **Method**:

Event-related potential study was conducted using a three-stimulus visual oddball paradigm on 40 consecutive adult patients who spontaneously sought care at a specialized outpatient neurology clinic for ADHD. Each patient underwent two distinct series, oddball stimuli representing 10% of the total stimuli. After data preprocessing, grand averages of valid epochs are used to compute mean amplitude, latency to peak and AUC in the 280-450ms window.

## **Discussion**:

In this initial phase, 87.5% of patients (mean age: 38.2 years; range: 16–68 years; 47.5% female) exhibited poorly developed P300 waves, consistent with neuropsychological evaluations. The rejection rate of epochs was less than 15% for all studies.

## **Conclusion**:

These findings suggest that the P300 wave may serve as a biomarker for methylphenidate response in the adult ADHD population. The next phase of this study will involve intra-individual comparisons of P300 wave characteristics before and during methylphenidate treatment.

## **Do you have any conflicts of interest?**

No

**P-10-012**

**Differential association between electrophysiological sleep and depression given ADHD risk and pharmacotherapy | ID #331**

Abstract Submitter: Vivien Reicher

Co-Authors: Boglárka Kertész, Nóra Bunford

### **Object**:

Youth with ADHD often have sleep problems, and these are especially pronounced in those who also show difficulties with emotion regulation (ED) and internalizing problems. Most studies rely on subjective measures (questionnaires), with few using objective tools like electroencephalography (EEG). Non-REM sleep slow-wave activity (SWA), an index of cortical maturation, remains underexplored in ADHD and co-occurring affective difficulties.

### **Method**:

We examined the association between EEG sleep variables (sleep onset latency, sleep efficiency, SWA) and affective problems (depression, ED) in adolescents (N=77), as a function of ADHD and pharmacotherapy. Sleep was measured during an at-home sleep assessment using the DREEM2 headband. Depression and ED were measured using the Youth Self-Report Form. ADHD risk was determined via parent-report on the ADHD Rating Scale-5.

### **Discussion**:

In adolescents at-risk for ADHD –but not in adolescents not at-risk for ADHD– longer sleep onset latency was associated with higher depression scores ($b=4.910$, $p<.001$). In ever-medicated adolescents at-risk for ADHD –but not in medication-naïve, at-risk adolescents or in adolescents not at-risk–, higher SWA was associated with higher depression scores ($b=.180$, $p=.003$).

### **Conclusion**:

Findings align with the broader literature showing a differential association between sleep problems and depression in at-risk and not at-risk populations. A main novelty here is the association between SWA, an index of brain maturation, and depression in ever-medicated adolescents at-risk for ADHD. SWA could be a marker for better understanding the intersection of neurodevelopment and depression in ADHD.

### **Do you have any conflicts of interest?**

No

**P-10-013**

**Greater cortical excitation in medication-naive young people with ADHD versus controls | ID #287**

Abstract Submitter: Alannah Smyth

Co-Authors: Clodagh Earley, Tom Farnan, Declan Quinn, Admire Clinic, Jane Mcgrath, Robert Whelan

**Object**:

Aperiodic components of the electroencephalography (EEG) spectrum are promising markers for ADHD. Exponent and offset parameters reflect excitation/inhibition (E-I) balance and neuronal firing, respectively. This study aimed to: 1) replicate findings of lower E-I balance and less neuronal firing in medication-naive youth with ADHD during eyes-closed EEG and 2) test if these patterns persist in dynamic eyes-open recordings.

**Method**:

50 participants (24 medication-naive, clinician-diagnosed ADHD, 26 typically developing controls, aged 10-17 years) completed eyes-closed and eyes-open resting-state recordings under 128-channel EEG. Power Spectral Density was averaged across channels and exponent and offset were calculated using Specparam. Linear Mixed Models were used to analyse exponent and offset differences by ADHD diagnosis while controlling for age and sex.

**Discussion**:

Individuals with ADHD exhibited smaller exponents than typically developing controls during eyes-closed EEG ($p=0.003$). Eyes-open EEG showed a consistent pattern, with smaller exponents observed in the ADHD group ($p=0.038$). No significant differences in aperiodic offset were found between the groups in either eyes-closed or eyes-open conditions.

**Conclusion**:

This study replicated findings of smaller exponents in children and adolescents with ADHD, although here all participants were medication-naive. Smaller exponents suggest a shift toward cortical excitation, impairing processing and affecting attention and inhibition. These results were consistent across resting-state conditions, supporting the aperiodic exponent as a physiological marker. No offset differences suggest similar neural firing rates.

**Do you have any conflicts of interest?**

No

**P-10-014**

**Mobile electroencephalography for ADHD treatment monitoring: insights from young people and parents | ID #295**

Abstract Submitter: Alannah Smyth

Co-Authors: Clodagh Earley, Snap Clinic, Jane Mcgrath, Robert Whelan

## **Object**:

Methylphenidate (MPH) is the first-line ADHD treatment, but 30% of patients lack a meaningful response, showing the need for objective measures of treatment response. At-home electroencephalography (EEG) offers a scalable method for biomarker development. This study explores at-home EEG's tolerability and potential role in ADHD treatment through interviews with young people and parents who completed at-home EEG before and after starting MPH.

## **Method**:

4 young people (10-12 years old) with clinically diagnosed ADHD and their parents were recruited from a larger study involving at-home EEG pre- and post-MPH treatment. Semi-structured interviews were conducted to explore experiences with the at-home EEG protocol and its potential for ADHD treatment monitoring. Braun and Clarke's 7-step reflexive thematic analysis was followed, including familiarisation, code generation, and theme development.

## **Discussion**:

4 themes were generated: Challenges in ADHD assessment and treatment, highlighting parental frustration and the need for objective measures. Aspirations for Mobile EEG, emphasizing potential for medication monitoring and clinical integration. Engagement Barriers, identifying discomfort and session length as factors affecting adherence. Gamification's Role, underscoring the need for engaging, visually appealing tasks to improve motivation.

## **Conclusion**:

Participants' data suggests mobile EEG is tolerable for at-home research, enhancing the scalability of future biomarker studies. Parents expressed a desire for biological measures in the treatment process and supported mobile EEG as an option. Future studies should incorporate gamified tasks adaptable to individual abilities to maintain young people's interest, while also addressing equipment comfort and the time burden on families

## **Do you have any conflicts of interest?**

No

**P-10-015**

**Atypical asymmetrical perceptual organization in ADHD: An event-related potential study on contour integration | ID #55**

Abstract Submitter: Li Sun

Co-Authors: Shaogen Zhong, Guisen Wu, Tianbao Piao, Yu Zhu, Chen Dang, Yuan Feng, Naizhen Shi, Taizhu Liang, Yufeng Wang, Changming Wang

## **Object**:

Perceptual organization (PO) is a fundamental process in visual perception, facilitating the arrangement of sensory input into coherent patterns or objects, thereby aiding in the interpretation of complex scenes. This study aimed to examine the neural mechanism of PO impairment in children with attention deficit hyperactivity disorder (ADHD) and to explore its relationship with higher-order cognitive functions.

## **Method**:

The study included 36 children with ADHD and 36 age and gender-matched healthy controls (HC). We examined the PO in all subjects using a contour integration task combined with event-related potential recordings. ANOVA was employed to analyze group differences in P1, N1, and closure negativity (Ncl) amplitudes. Pearson correlation was used to explore the link between significant amplitudes and higher-order cognitive functions in the ADHD group.

## **Discussion**:

The late Ncl amplitudes had a significant interaction effect between group and hemisphere ($F = 7.309$, $P = 0.009$, $\eta 2 = 0.095$), indicating significantly diminished amplitudes in the ADHD group compared to HC group in the right hemisphere ($P = 0.024$). There was a negative relationship between the Ncl amplitudes in the right hemisphere under the high jitter conditions and the inattention scores within the ADHD group ($r = -0.341$, $P = 0.042$).

## **Conclusion**:

These findings suggest the presence of atypical lateralized PO in children with ADHD characterized by dysfunction in the right hemisphere. This pattern may contribute to the neuropathological mechanisms associated with ADHD and could serve as a potential target for future therapeutic interventions.

## **Do you have any conflicts of interest?**

No

**P-10-018**

**Keeping the boundaries - sharper self other distinction and altered somatosensory processing in adult ADHD | ID #347**

Abstract Submitter: Andrea Johansson Capusan

Co-Authors: Morgan Frost-Karlsson, Rebecca Boehme

**Object**:

People with ADHD often describe tactile hypersensitivity and social difficulties, but neither are part of the diagnostic criteria, and the mechanisms are not known. Earlier we found a sharper self-other distinction between self and other touch in adults with ADHD compared to controls, but no difference in touch threshold. Here we explored tactile hypersensitivity and self-other distinction in ADHD and whether they were related to ADHD symptoms.

**Method**:

In 27 adults with ADHD and 24 sex and age matched controls, we measured somatosensory evoked potential (SEP) amplitudes during an earlier described, standardised touch task, using individually adjusted electrical stimuli on the radial nerve at the base of the thumb. Electrodes were placed at the c6 cervical level, and at C4, Cz, and Fz scalp positions. Stimuli induce a thumb twitch but were not painful or intolerable for the participants.

**Discussion**:

Participants with ADHD self-reported greater tactile sensitivity and ADHD symptom severity than controls and received higher Q-scores on the Qb-test. These values correlated with one another. ADHD participants had lower thresholds for electrical radial nerve stimuli, before experiencing them as unpleasant or painful and a greater reduction in cortical SEP amplitudes during additional tactile stimuli which was correlated with ADHD symptoms.

**Conclusion**:

We found empirical evidence for touch hypersensitivity in adults with ADHD, through both self-reports and decreased tolerable threshold for radial nerve stimulation. Increased touch sensitivity was associated with, mainly inattentive, ADHD symptom severity. We also found indications of tactile sensory overload related to inattention.

**Do you have any conflicts of interest?**

No

Presenting author has received consultancy and speakers' fees from Indivior, Camurus and DNE Pharma all outside the scope of this work. All other authors have no competing interests to declare. This research was funded by a Swedish research council grant

**P-11-001**

**Testing a basal ganglia computational model of the complex etiology of ADHD | ID #399**

Abstract Submitter: Philippe Robaey

Co-Authors: Miriam Schirru, Florence Véronneau-Veilleux, Mauro Ursino, Fahima Nekka

**Object**:

There is consensus that ADHD is a complex disorder resulting from interactions between genetic predispositions and environmental effects during development. Pharmacological treatments alter dopaminergic transmission in the basal ganglia-thalamus-cortex loop. We tested this etiological interaction using a mechanistic model of the cortico-basal-thalamo-cortical loops that include both tonic and phasic components of the dopaminergic discharge.

**Method**:

We simulated the effects of abnormal dopaminergic transmission (changes in phasic/tonic ratio) during probabilistic learning, with either Gaussian or uniform noise in the motor cortex output. The type of noise (related to micro-structural variations) and the phasic/tonic ratio (related to variations in discharge regulatory processes) reflect genetic factors, while differences in stimulus sequence during learning reflect environmental factors.

**Discussion**:

A typical ADHD phenotype characterized by increased response time variability specifically due to an excess of slow responses and a moderate decrease in response accuracy, results from the specific combination of excessive phasic discharge associated with uniform noise, but only for adverse stimulus sequences.

**Conclusion**:

This model provides a testable framework for understanding how different factors contribute to the emergence of an ADHD-like phenotype, as well as how the system can become resilient if only one of these factors is corrected.

**Do you have any conflicts of interest?**

No

none

**P-11-002**

**Multimodal assessment of ADHD based on a new virtual "Virtual Office" scenario | ID #371**

Abstract Submitter: Niclas Braun

Co-Authors: Laura Asché, Julian Pakos, Annika Wiebe, Alexandra Philipsen

### **Object**:

Main diagnostic criteria for adult ADHD rely on subjective symptom descriptions. Additional objectifiable measures, might, however, be helpful to further examine the heterogeneous structure of ADHD symptoms. As a first step, we developed a new Virtual Reality paradigm called "virtual office", that allows for a multimodal measurement of ADHD symptoms during the conduction of a symptom-provocing E-Mail Sorting Task (EST).

### **Method**:

Within the virtual office, participants performed the EST, in which they had to sort e-mails. Besides task performances, gaze behavior, body movements, fNIRS activity, and subjective symptoms were recorded. The setup was tested in two studies: In Study I, 21 adults with ADHD were compared to 21 healthy controls (HC). In Study II, medicated (n=23) and unmedicated adults with ADHD (n=24) and adults with depression (n=16) were compared.

### **Discussion**:

In Study I, adults with ADHD displayed a higher processing time variability than HC. Moreover, regarding gaze behavior, there was a trend for a higher non-task focus in ADHD compared to HC. Also, patients reported higher subjective inattention and hyperactivity than HC. No further group differences were found. Regarding Study II, the data are currently being analysed and first results will be presented at the congress.

### **Conclusion**:

While further research is necessary, the newly developed Virtual Office scenario offers a first important step towards an objective and multimodal characterisation of ADHD symptoms.

### **Do you have any conflicts of interest?**

No

No conflict of interest existent.

**P-11-003**

**Social cognition in ADHD: Manifestations, impairment and changes across lifespan: A systematic review | ID #6**

Abstract Submitter: Alessandra Capuozzo

Co-Authors: Salvatore Rizzato, Giuseppe Grossi, Francesca Strappini

### **Object**:

Most individuals with ADHD manifest social problems and difficulties in adapting in society, a hypothesis states that it could be due to aspects related to executive functions EFs, language, and Theory of Mind (ToM) In this systematic review, conducted according to the PRISMA 2020 guidelines, we aimed to assess differences in the cognitive processes associated with social cognition—language, ToM, and EFs—between ADHD and controls.

### **Method**:

This systematic review was conducted following guidelines of the PRISMA 2020 and preregistered in PROSPERO (CRD42023474681). The research was conducted on Google Scholar, Pubmed, and PsynINFO up to May 2024. English peer-reviewed articles were included with the following criteria: group with primary ADHD diagnosis, were empirical, included quantitative data, utilized standardized and validated measures to assess Social cognitive processes.

### **Discussion**:

On 22 selected studies, 17 suggest that several processes associated with language and EF may play an important role in social cognition, especially during childhood compared to adulthood. These processes included social problem solving, interaction skills, pragmatic skills, emotional prosody, sarcasm, paradoxical sarcasm recognition, verbal and nonverbal communication, emotion recognition, false belief, social behaviors, gesture codification.

### **Conclusion**:

Our results may have important implications in the clinical context. Indeed, during the therapeutic process, it could be fundamental to work on specific social cognition impaired sub-abilities, improving patients' quality of life regarding social interaction and social adaptation.

### **Do you have any conflicts of interest?**

No

**P-11-004**

**Influence of national traumatic events on ADHD related symptoms in clinical and non-clinical samples of young adults | ID #269**

Abstract Submitter: Tal Erdinast

Co-Authors: Gili Katabi, Abraham Weizman, Iris Manor, Nitzan Shahar

### **Object**:

Previous studies suggest that national traumatic events, particularly terror attacks, exert a widespread impact on the general population, including those not directly exposed to the events. However, limited research exists on the effect of such events on ADHD-related symptoms in both healthy individuals and those diagnosed with ADHD.

### **Method**:

This study examines the level of ADHD-related symptoms before and after the October 7 terror attack among both ADHD and non-ADHD young adults in Israel who were not directly exposed to warfare. Specifically, 85 young adults completed measures of current ADHD symptoms, childhood ADHD symptoms, and anxiety at both time points. We report Bayesian analysis estimates for pre-post measures across and within each group.

### **Discussion**:

As expected, the control group experienced a significant increase in inattention and hyperactivity/impulsivity symptoms after the attack (posterior median = 8.06, CI95% [5.72, 10.36]). However, the ADHD group displayed a slight reduction in symptoms severity (posterior median = -2.43, CI95% [-4.66, -0.14]). The increase in symptoms severity tended to diminish as time passed and was positively correlated with an increase in anxiety symptoms.

### **Conclusion**:

National traumatic events can temporarily increase inattention and hyperactivity/impulsivity symptoms in adults without ADHD, even without direct exposure to warfare, but this increase tends diminish over time. Conversely, adults with ADHD showed a slight reduction in symptoms, following the national traumatic event. Future research should examine ADHD functional capabilities under acute stress to better understand this relationship.

### **Do you have any conflicts of interest?**

No

**P-11-005**

**Sleep and circadian rhythms disruption in adults with ADHD: Preliminary data on circadian rhythms and activity patterns | ID #138**

Abstract Submitter: Giancarlo Giupponi

Co-Authors: Chiara Mattei, Lorenzo Tonetti, Federica Giudetti, Nicole Rebekka Conca, Sonia Holzer, Vincenzo Natale, Andreas Conca

**Object**:

ADHD, affecting 1-8% of adults globally, is characterized by hyperactivity, impulsivity, and inattention, often persisting into adulthood. This study explores circadian rhythm differences in adults with ADHD compared to healthy controls, focusing on motor activity asymmetry as a potential diagnostic biomarker.

**Method**:

In collaboration with the South Tyrol Health Authority and the University of Bologna, 40 ADHD-diagnosed adults and 80 controls participated. Preliminary analysis included nine participants per group, using actigraphy to track motor activity and sleep parameters over one week. Participants also completed a sleep diary and Mini Sleep Questionnaire.

**Discussion**:

Results showed ADHD patients exhibited higher motor activity and distinct ultradian oscillations, deviating from typical circadian patterns. These differences suggest disrupted inter-hemispheric synchronization and altered interactions between circadian and homeostatic processes.

**Conclusion**:

Motor activity asymmetry holds promise as a non-invasive ADHD biomarker. While the small sample limits generalizability, the findings support further research into circadian alterations and targeted therapies. Understanding these disruptions could refine diagnostic tools and enhance personalized ADHD treatments.

**Do you have any conflicts of interest?**

No

**P-11-006**

**Are attentional lapses in ADHD associated with large amplitude low frequency fluctuations in autonomic arousal? | ID #306**

Abstract Submitter: Maddie Groom

Co-Authors: Rachel Young, Elle Pearce, Pitijutha Panaboot, Laxmi Pydikondala

### **Object**:

Attentional lapses tend to have a low-frequency periodicity that may reflect systematic fluctuations in autonomic arousal. Sympathetic autonomic oscillations contribute to Low Frequency (LF) Heart Rate Variability (HRV), while fluctuating tonic noradrenergic activity in the Locus Ceruleus (LC) can be monitored with pupillometry. We predicted that attentional lapses in ADHD would tend to occur near large amplitude troughs in LF autonomic arousal.

### **Method**:

35 adults with ADHD did a 20-minute sustained attention task while Pupil Diameter (PD) and electrocardiography (ECG) were recorded, and ECG R-R intervals interpolated to give a continuous R-R timecourse. PD and R-R timecourses were bandpass filtered to the LF HRV band (0.04 - 0.15Hz), then mean amplitude, Inter-trial Coherence (ITC) and quadratic fit coefficients (for averaged segmented trial timecourses) computed for Error vs Correct trials.

### **Discussion**:

For LF PD timecourses, one sample t-tests for Error-Correct differences across participants indicated significantly greater amplitudes ($p=.025$), and phase consistency (ITC: $p<0.010$) for Error than for Correct trials. Quadratic fit parameters were also significantly more positive ($p<.001$), indicating phase-locking of errors to LF troughs. No effects of trial accuracy were found for LF R-R, despite strong phase-locking with LF PD, at varying lags.

### **Conclusion**:

In adult ADHD, attentional lapses during a task requiring sustained attention tend to occur at troughs in noradrenergic LC activity. While LF HRV and LF PD fluctuations appear to be mechanistically linked, lagged cardiac responses may make LF PD a more immediate correlate of tonic arousal than LF HRV measures. We will next investigate whether LF pupillometry amplitudes during sustained attention tasks are greater in adults with ADHD than without.

### **Do you have any conflicts of interest?**

No

**P-11-007**

**Investigating the relationship between neuronal Pentraxin 2 and ADHD symptoms in adults with ADHD | ID #354**

Abstract Submitter: Ali Kandeger

Co-Authors: Samet Kaya, Ramazan Kocabaş, Ahmet Emre Yorulmaz

## **Object**:

Recent research highlights the role of glutamate and related pathways in ADHD etiology. Neuronal pentraxins (NPTXs), particularly NPTX2, modulate glutamate signaling and have been implicated in neurodegenerative and psychiatric disorders. This study investigates the association between NPTX2 levels and ADHD symptoms in adults.

## **Method**:

A total of 79 adults with ADHD and 70 healthy controls (HC) were recruited. Participants underwent Structured Clinical Interview for DSM-5 Disorders, Clinician Version, completed ADHD-related self-report scales, and neurocognitive tests (Stroop, Wisconsin Card Sorting Test, and others). NPTX2 levels were measured, and statistical analyses were conducted. The study was approved by the Ethics Committee of Selçuk University (Decision No: 2023/495).

## **Discussion**:

NPTX2 levels were higher in the ADHD group compared to HC. Within the ADHD group, NPTX2 levels correlated with symptom severity and neurocognitive performance, unlike in HC. Linear regression analyses revealed a significant association between NPTX2 levels and ADHD symptoms in adults with ADHD, independent of age, gender, years of education, and anxiety/depression scores ($t = -2.76$, $p < 0.01$), but not in HC.

## **Conclusion**:

This study is the first to investigate the relationship between NPTX2 and ADHD symptoms, revealing significantly elevated NPTX2 levels in adults with ADHD. These findings suggest a potential compensatory or protective role for NPTX2 in ADHD and highlight the need for further research on glutamate modulators and neuronal pentraxins.

## **Do you have any conflicts of interest?**

No

**P-11-008**

**Are eating disorder symptoms associated with cognitive flexibility in adults diagnosed with ADHD? | ID #91**

Abstract Submitter: Selin Karakaya Çadirci

Co-Authors: Bedriye Öncü

## **Object**:

ADHD symptoms in adults often co-occur with mood and eating disorders(EDs), sharing traits like emotional dysregulation, which suggests overlapping mechanisms. Cognitive flexibility, essential for adapting to change, may underlie this relationship. This study explores the association between ED symptoms and cognitive flexibility in adults with ADHD.

## **Method**:

This study included 76 adults with ADHD (mean age: 23.28±4.64) and 69 healthy controls (mean age: 23.08±3.56) from Ankara University Psychiatry Department. Participants completed the Wender-Reimherr Adult Attention Deficit Disorder Scale(WRADDS), Wender Utah Rating Scale (WURS), Emotional Eater Questionnaire(EEQ), Hospital Anxiety and Depression Scale, Cognitive Control and Flexibility Questionnaire(CCFQ), and Berg's Card Sorting Test.

## **Discussion**:

The ADHD group showed significantly higher EEQ scores (ADHD:15.44±7.62, controls: 9.21±6.26,$t=5.39$, $p=0.00$). Emotional eating was correlated with WRAADDS-inattention ($r=0.34$, $p<0.01$), emotional dysregulation ($r=0.24$, $p<0.05$), and CCFQ-Cognitive control over emotion ($r=-0.24$, $p < 0.05$). Regression analysis identified adult inattention as the sole significant predictor of ED symptoms in the ADHD group.

## **Conclusion**:

As anticipated, cognitive flexibility was impaired in the ADHD group. Cognitive flexibility influences the ADHD-ED relationship, with WRAADDS-Inattention as the sole predictor of EEQ scores, linking impaired frontal cortex function to ED. Longitudinal studies are needed to clarify these dynamics and guide interventions.

## **Do you have any conflicts of interest?**

No

**P-11-009**

**Emotion regulation in adults with ADHD: The predictive value of core ADHD symptoms | ID #330**

Abstract Submitter: Joakim Kolle

Co-Authors: Anne Halmøy, Karin Schiøler Hellum, Berge Osnes, Jan Haavik, Astri J. Lundervold

**Object**:

In a subset of data from an ongoing EU project, Dynamics of Affect Modulation in Neurodevelopmental Disorders (DynAMoND), we conducted a cross-sectional analysis to investigate how core ADHD symptoms (inattention and hyperactivity) explain variance in DERS (Difficulties in Emotion Regulation Scale) scores. Our aim was to identify specific emotional regulation challenges and examine the influence of ADHD symptom severity and comorbid conditions.

**Method**:

The study included 28 participants with ADHD and 8 controls, as part of the DynAMoND study. Participants completed the DERS, which includes six subscales. ADHD severity was assessed using the Adult ADHD Self-Report Scale (ASRS). Between-group differences were analyzed using t-tests, and the relationship between DERS and ASRS was explored through regression analyses with ASRS as a predictor.

**Discussion**:

Significant differences between the ADHD and control groups were observed across most DERS subscales. The total ASRS symptom score significantly predicted emotion regulation strategies ($p < .001$), impulse control ($p = .03$), and goal-directed behavior ($p = .002$) subscales of the DERS. Planned analyses will investigate whether comorbid anxiety or depression moderates these challenges.

**Conclusion**:

Our findings demonstrate substantial emotion regulation deficits in adults with ADHD and establish ADHD symptom severity as a predictor of these difficulties. Future studies will analyze the complete EU project sample, comparing emotion regulation patterns in adults with ADHD, bipolar disorder, and borderline personality disorder. Longitudinal data will be crucial for understanding the temporal dynamics of emotional regulation in these disorders.

**Do you have any conflicts of interest?**

No

**P-11-010**

**Prevalence of emotional dysregulation in adults with ADHD: Insights from a specialist outpatient clinic | ID #64**

Abstract Submitter: Nicole Mauche

Co-Authors: Taini Theuerkorn, Christian Makiol, Jue Huang, Maria Strauß

## **Object**:

This study examines emotional dysregulation (ED) in adults with ADHD (~3% global prevalence), often linked to comorbidities. ED, affecting 34–70% of adults with ADHD, involves poor inhibitory control, intense emotions, and self-regulation deficits. Despite its significance, ED is not routinely assessed in ADHD diagnostics. This work explores ED prevalence and its association with comorbidities across ADHD subtypes.

## **Method**:

The sample (N=749, 44.6% female, M=33.7 years) included ADHD patients assessed at a specialized clinic (2013–2023). Excluded were cases with organic, psychotic/bipolar, severe MDD, specific personality, or developmental disorders. Latent Class Analysis (LCA) of Wender-Reimherr Interview data identified subgroups. Fit indices determined class number. Subphenotypes were analyzed for links to function, symptoms, comorbidities, and distress.

## **Discussion**:

The prevalence of emotional dysregulation (ED) was 60%. Six subtypes were identified, distinguishing ED+ from ED− groups. ED+ individuals showed more childhood ADHD symptoms, depressive symptoms, mixed presentations, and higher comorbidities (especially substance use disorders). They had more severe symptoms, greater impairments, and higher psychological distress. No differences were found in age, gender, or pharmacotherapy.

## **Conclusion**:

The results emphasize the importance of incorporating Emotional Dysregulation (ED) into the diagnosis and treatment of adult ADHD. ED symptoms should be systematically assessed as an emotional syndrome, as they may indicate a subphenotype of ADHD with greater severity and higher functional impairment.

## **Do you have any conflicts of interest?**

No

**P-11-011**

**Clinical correlates of emotional dysregulation among adults with ADHD | ID #440**

Abstract Submitter: Miriam Milintenda

Co-Authors: R. Caso, A.M. D'Onofrio, A.M. Giannico, M. Massetti, L. Onori, S. Rossi, M. Pepe, T. Gallovini, M. Di Nicola, G. Sani

## **Object**:

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental condition affecting 3-5% of adults. Emotional dysregulation (ED) is recognized as a transdiagnostic factor across psychiatric disorders and a core feature of ADHD linked to functional impairment. However, its association with ADHD severity and other psychopathological variables remains underexplored. This study investigates these relationships in adult ADHD outpatients.

## **Method**:

Participants were divided into two groups (with/without ED) according to DERS (cut-off = 95). Sociodemographic, clinical, and psychometric variables were compared. ADHD and psychiatric comorbidities were assessed with DSM-5 Structured Clinical Interviews. ADHD severity and psychopathology were measured using ASRS-5 and SCL-90-R. Odds Ratios (OR) and Cohen's d estimated effect sizes, and logistic regression examined factors associated with ED.

## **Discussion**:

Patients with high ED were predominantly female ($p=0.023$) and had greater ADHD severity in inattentive and hyperactive/impulsive domains ($p<0.001$). They had higher rates of substance use disorders ($p=0.038$) and suicide attempts ($p=0.048$). High ED was linked to anxiety, depression, OCD traits, and sleep disturbances (all $p<0.001$). Regression showed ED significant associations with interpersonal sensitivity ($p=0.026$) and hyperactivity ($p=0.045$).

## **Conclusion**:

Adults with ADHD and high ED exhibit more severe symptoms and psychopathology particularly in hyperactivity and interpersonal sensitivity. These findings underscore the need for systematic ED assessment in ADHD to enhance diagnostic precision and guide tailored interventions, improving emotional regulation and functional outcomes. Further research should investigate the underlying mechanisms to develop more effective, personalized treatments.

## **Do you have any conflicts of interest?**

No

**P-11-012**

**In the trap of perfectionism: Characteristics of emotional dysregulation in ADHD | ID #340**

Abstract Submitter: Vanessa Müller

Co-Authors: Bettina Pikó

## **Object**:

ADHD is not merely about inattentiveness and hyperactivity but an intense struggle with emotional regulation. Anger, whether internalized or expressed, reflects underlying tension, often resulting from difficulties in managing frustration. Perfectionism, often associated with ADHD, may escalate distress due to emotional dysregulation. Exploring the connection between these emotional aspects can contribute to our understanding of ADHD.

## **Method**:

A total of 221 college students, aged 18 to 35 years (M = 24.17, SD = 6.91), from Hungarian higher education institutions participated in this study by completing an online self-administered questionnaire. The measurement included validated instruments, such as the Adult ADHD Self-Report Scale (ASRS-V1.1), the Frost Multidimensional Perfectionism Scale – Brief, and the Anger Expression Scale.

## **Discussion**:

Employing a mediation model, ADHD symptoms directly contributed to maladaptive perfectionism ($\beta$=.10, p<.001). More importantly, symptoms of ADHD influenced perfectionism through two pathways: internalized anger, tempering the perfectionistic drive (B=-.26, p<.001), and expressed anger, amplifying it (B=.19, p=.002). Notably, ADHD negatively predicted internalized anger ($\beta$=-.10, p<.001) while positively predicted expressed anger ($\beta$=.11, p<.001).

## **Conclusion**:

Our findings suggest that the way anger is regulated may influence maladaptive perfectionism in distinct ways. Internalized anger appears to undermine striving by fostering self-directed negativity, while expressed anger seems to drive the pursuit of unrealistic goals. A better understanding of these patterns could enhance psycho-educational programs and interventions aimed at emotional regulation in individuals with ADHD symptoms.

## **Do you have any conflicts of interest?**

No

**P-11-013**

**Inside the emotional storm: Conflict and regulation in ADHD | ID #338**

Abstract Submitter: Tehila Nadav

Co-Authors: Avishai Henik

**Object**:

Emotional dysregulation is a hallmark of ADHD, affecting daily functioning, relationships, and well-being. Emotional processing and reactivity difficulties contribute to these challenges. Emotional conflict, involving the activation of competing emotional responses, highlights the struggles ADHD individuals face in regulating emotions. This study examined emotional conflict in adults with ADHD using a Picture-Picture Priming Task.

**Method**:

The study included 30 adults with ADHD (M=23.90, SD=1.37) and 30 neurotypical controls (M=24.84, SD=1.53). Participants completed the Picture-Picture Priming Task. They were instructed to evaluate the valence of an emotional target picture, preceded by a prime picture displayed for 100 ms. Primes varied in valence (positive, negative, or neutral), creating congruent, incongruent, or neutral conditions.

**Discussion**:

The findings reveal that individuals with ADHD face greater challenges in managing emotional conflict and transitioning between emotional states, particularly in incongruent conditions where a negative prime was followed by a positive target. These results highlight the intricate interplay between emotional and attentional processes in ADHD, where deficits in one domain intensify challenges in the other.

**Conclusion**:

Understanding these difficulties is critical for developing targeted interventions that enhance emotional regulation and attentional control. Such strategies can address the specific challenges faced by individuals with ADHD, improving their ability to manage emotional conflict.

**Do you have any conflicts of interest?**

No

**P-11-014**

**Association between asymmetry in brain excitability and clinical symptoms of ADHD in adults | ID #156**

Abstract Submitter: Rachel Ozeri

Co-Authors: Uri Alyagon, Shalev Hadar, Abraham Zangen

## Object:

ADHD is associated with compromised brain lateralization, which may contribute to symptoms like impulsivity and poor attention, and may also affect motor activity and skills. The current study investigated the relationship between motor and prefrontal asymmetry and symptoms of inattention and hyperactivity in adults with ADHD

## Method:

We compared rest EEG activity and the resting motor threshold (RMT) of adults with ADHD (n=85) to that of neurotypical controls (n=161), using transcranial magnetic stimulation, and calculated left motor asymmetry (LMA) as the RMT ratios between the hemispheres. Correlations between these measures and levels of symptoms (using the Conners' Adult ADHD rating scales) were evaluated

## Discussion:

Adults with ADHD had higher RMTs than controls (49.5%±0.5 vs 53.4%±1.3 and 47.4%±0.4 vs 53.0%±1.3 $p<0.001$ for right and left hands) but lower LMA (1.01±0.01 vs 1.05±0.006 $p<0.01$). Lower LMA correlated with increased inattention ($r=-0.28$ $p<0.001$), higher LMA with hyperactivity (HYP) ($r=0.32$ $p<0.01$). Within both ADHD subgroups, LMA was higher with severe HYP (1.03±0.008 vs 0.99±0.01 $p<0.05$). LMA correlated negatively with EEG prefrontal asymmetry

## Conclusion:

Adults with ADHD present higher RMTs indicating reduced cortical excitability at least in their motor cortex, but lower LMA reflecting reduced (and nearly absent) asymmetry. Those with severe hyperactivity show closer to normal LMA values, which along with the opposite correlations between LMA and hyperactivity vs. inattention, suggests that hyperactivity may be a compensation mechanism to reduce inattention by normalizing brain asymmetry

## Do you have any conflicts of interest?

No

**P-11-015**

**The role of inner speech in goal identification in children with ADHD**

**| ID #200**

Abstract Submitter: Marie Ponthot

Co-Authors: Céline Fortin, Lucie Valentino, Laurence Rousselle

## **Object**:

Identifying and keeping the goal in mind during a task involve key processing steps for task success (Chevalier, 2015). In this process, inner speech plays a critical role to support executive control (Baron & Arbel,2022). Children with ADHD show deficits in inner speech (Berk & Potts,1991), possibly contributing to difficulties in task-switching tasks. This study examined the effect of inner speech manipulation on ADHD children's performance.

## **Method**:

Two age-matched groups (ADHD vs controls) were compared using an advanced computerized Dimensional Change Card Sorting test contrasting single tasks (no switch) with goal-switching tasks (no-switch and switch trials). Executive costs were examined across three conditions: verbalization, silence and articulatory suppression. Preliminary analysis compared 12 ADHD and 12 control children using mixed 3X2X3 repeated measures ANOVAs.

## **Discussion**:

ADHD children showed slower reaction times and lower accuracy than controls. A marginal trend suggested they might struggle with specific trials, resulting in differences in the magnitude of mixing costs (comparing non-switch trials) and switching costs (comparing switch vs. non-switch trials) across groups. However, no interaction was found between group and condition, indicating similar effect of inner speech manipulation across groups.

## **Conclusion**:

Results suggests that children with ADHD have more difficulty in goal processing resulting in a trend toward higher executive cost associated with goal switching (marginal). These group differences were not related to children’s ability to implement inner speech to maintain goal in working memory, as both groups were similarly affected by inner speech manipulations. Further investigation is needed, and data collection is ongoing.

## **Do you have any conflicts of interest?**

No

**P-11-016**

**Impairments in working memory and processing speed distinguish ADHD from emotional dysregulation in adult patients | ID #73**

Abstract Submitter: Giulio Emilio Brancati

Co-Authors: Anna Magnesa, Elena Costagli, Elisa Schiavi, Giulio Perugi

## **Object**:

Emotional dysregulation (ED) complicates the differential diagnosis between adult ADHD and affective disorders. Neuropsychological profiles from the Wechsler Adult Intelligence Scale-IV (WAIS-IV) help distinguish ADHD from healthy controls (HC), but the utility of working memory (WMI) and processing speed (PSI) indices in the presence of ED is unclear. This study aimed to investigate WMI and PSI differences among adults with ADHD, ED, and HC.

## **Method**:

101 adults were recruited at Pisa University Hospital (Italy), including 23 with ADHD, 27 with ADHD and ED, 28 with ED, and 23 HC. ADHD diagnosis was based on DSM-5 criteria. ED was defined as a score ≥3 on at least two ED domains of the Wender-Reimherr Adult Attention Deficit Disorder Scale. All participants were assessed using the WAIS-IV. One-way ANOVA, followed by Dunn's post-hoc test with Benjamini-Hochberg correction, was performed.

## **Discussion**:

Significant differences emerged for both WMI ($p=0.001$) and PSI ($p<0.001$). Post-hoc comparisons revealed significantly lower scores on both indices in participants with ADHD and ED compared to those with ED (WMI: 89.48±13.33 vs 100.89±14.75, padj=0.018; PSI: 98.15±13.59 vs 109.79±16.87, padj=0.035) and HC (WMI: 89.48±13.33 vs 105.00±13.15, padj=0.002; PSI: 98.15±13.59 vs 117.13±11.12, padj<0.001).

## **Conclusion**:

Impaired working memory and processing speed help differentiate ADHD in adults with ED. Cognitive assessment may enhance the diagnostic process of ADHD in patients with affective disorders.

## **Do you have any conflicts of interest?**

No

**P-12-001**

**Automatic sensory change processing in children with ADHD and its response to medication treatment: A visual mismatch negativity study | ID #108**

Abstract Submitter: Li Sun

Co-Authors: Chen Dang, Guisen Wu, Yu Zhu, Shaogen Zhong, Naizhen Shi, Yufeng Wang

**Object**:

In addition to high-order executive functions, underlying sensory processing is also thought to play an essential role in ADHD. Visual mismatch negativity (vMMN) reflects the ability of automatic visual change processing, our previous study showed it was impaired in adults with ADHD and could influence the core symptoms indirectly. This study aims to investigate the characteristic of vMMN in children with ADHD.

**Method**:

vMMN was elicited through a passive oddball paradigm. ADHD Rating Scale IV (ADHD-RS-IV) and Behavior Rating Inventory of Executive function (BRIEF) were respectively used to assess ADHD symptoms and ecological executive functions. In experiment 1, 95 ADHD and 54 well-matched healthy controls (HC) were included. In experiment 2, 33 ADHD received medication treatment (methylphenidate and atomoxetine) for 8 weeks to observe the changes of vMMN.

**Discussion**:

The results showed that late vMMN (264-324 ms) was significantly impaired in children with ADHD instead of the early one (140-200 ms). However, only early vMMN was significantly correlated with ADHD symptoms. After 8-weeks intervention, despite early or late vMMN did not show any significantly changes, the late left-frontal component (264-324 ms) changed noticeably and was correlated with the changes of ADHD symptoms.

**Conclusion**:

These findings suggested the automatic visual change processing as reflected by vMMN was impaired in children with ADHD. This is similar to our adult ADHD findings, suggesting this underlying sensory processing impairment persists from childhood into adulthood and maybe an effective biomarker for ADHD. In addition, it is difficult to improve this impairment through medication at least for 8 weeks, other effective methods should be implemented.

**Do you have any conflicts of interest?**

No

**P-12-002**

**Involvement of adiponectin in the biology of ADHD: A genomic cohort study in Japanese population | ID #485**

Abstract Submitter: Nagahide Takahashi

**No Abstract text available**

**P-12-003**

**How does adult temperament relate to ADHD symptom domains? Testing the dual-pathway model | ID #98**

Abstract Submitter: Clara Teuchert

Co-Authors: Henning Heinze, Julia Kerner Auch Koerner, Monika Daseking

**Object**:

Temperament provides a valuable framework for understanding ADHD across the lifespan, as extreme temperamental traits are considered etiological risk factors. The Dual-Pathway Model links elevated reactive traits - Negative Affect (NA) and Surgency (SUR) - to the hyperactive/impulsive ADHD symptom domain, and a low regulatory trait - Effortful Control (EC) - to inattention. A compensatory extension considers a moderating effect of EC.

**Method**:

158 adults (79 ADHD patients, 79 controls) completed the Adult Temperament Questionnaire. Differences in temperament were examined. A binary logistic regression was performed to test the hypothesized direction of effects. Hierarchical multiple regressions were conducted for self-rated symptoms of hyperactivity/impulsivity and inattention. It was hypothesized that EC would moderate reactive traits (SUR/NA) and influence both ADHD symptom domains.

**Discussion**:

The ADHD group had higher NA and lower EC scores. No group difference was found for SUR. EC was a protective factor, while the effects of NA and SUR were not significant, with the model correctly classifying 88% of cases. EC was an important predictor for both symptom domains, while only SUR contributed to the explanation of variance in hyperactivity/impulsivity. Contrary to expectations, no moderating effect of EC was found.

**Conclusion**:

Our findings complement research from childhood and adolescence and advance our understanding of ADHD trajectories into adulthood. By integrating temperament into diagnostic and treatment frameworks, clinicians could better address the emotional and regulatory challenges faced by ADHD patients. This highlights the value of temperament-based approaches for refining diagnosis and developing targeted interventions.

**Do you have any conflicts of interest?**

No

**P-12-004**

**Decoding emotion regulation in adults with ADHD: Subphenotypes, neural correlates, and clinical features | ID #165**

Abstract Submitter: Xinxin Yue

Co-Authors: Qianrong Liu, Haimei Li, Yuan Gao, Meirong Pan, Min Dong, Yufeng Wang, Qiujin Qian, Lu Liu

**Object**:

Adults with ADHD frequently exhibit significant emotional dysregulation, which includes emotion impulsivity and impaired emotional regulation abilities. However, ED in ADHD is heterogeneous, and the underlying causes remain unclear. Therefore, this study aims to investigate and validate the presence of emotion regulation profiles in ADHD adults, further compare behavioral and neuroimaging differences across profiles.

**Method**:

A total of 497 ADHD adults were recruited. The eight dimensions from Emotion Regulation Questionnaire and Difficulties in Emotion Regulation Scale were used for the latent profile analysis. Support vector machine classification was performed to verify the model. The external validity was verified based on differences in emotion regulation, executive function, and brain functional connectivity (FC) of amygdala. Potential mediators were examined.

**Discussion**:

We identified three profiles: Well-Adapted LP1 (29.4%), Moderately Dysregulated LP2 (49.7%), and Severely Dysregulated LP3 (20.9%). SVM validation achieved 97.8% accuracy. The effects of LPs on ADHD symptoms were mediated by impulse control and goal management. LP2 and LP3 exhibited greater executive function challenges, with LP2 displaying weaker postcentral gyrus-amygdala connectivity compared to LP1 and LP3.

**Conclusion**:

Our findings suggest the presence of emotional regulation subphenotypes in ADHD adults with distinct neural correlates, which may help deepen the understanding of the clinical characteristics of different regulatory abilities and guide future targeted interventions for emotional dysregulation symptoms in ADHD adults.

**Do you have any conflicts of interest?**

No

**P-12-005**

**Enhanced neurobiological biomarker differentiation for ADHD through a risk-informed design | ID #351**

Abstract Submitter: Igor Duarte

Co-Authors: Luis Rohde, Christian Kieling, Arthur Caye

**Object**:

In the present study, utilizing a carefully phenotyped sample from a middle-income country, we invoked a risk-informed design to compare mean differences across three candidate biomarkers for ADHD: polygenic scores, subcortical brain volumes, and executive function.

**Method**:

Participants were 2511 children and adolescents (6 to 14 years) from the Brazilian High Risk Cohort for Mental Conditions. We calculated risk for ADHD among unaffected individuals using a multivariable clinical and sociodemographic risk model. We compared measures of three proposed ADHD biomarkers (PGS, subcortical volumes, and EF) between participants with vs. without ADHD, and ADHD vs. without ADHD with a high- vs. low-risk loading for ADHD.

**Discussion**:

Despite extensive ADHD biomarker research, genetic and neural variants show limited clinical utility due to overlap between affected and unaffected individuals. ADHD cases show higher PGS (d = .17), smaller subcortical volumes (d = -.25), and poorer EF (d = -.22). Separating unaffected groups into low- and high-risk subgroups increased differences (d = .20–.60) and doubled overlap-free areas, improving clinical insights.

**Conclusion**:

Here, we demonstrate that a risk-based design increases effect sizes when comparing candidate biomarkers for ADHD. Our study provides a model that may hold promise for evaluating similar contrasts in other mental disorders and samples.

**Do you have any conflicts of interest?**

No

**P-12-006**

**The network relationship between autistic traits, ADHD symptoms and executive functions in children with ADHD | ID #417**

Abstract Submitter: Yuan Gao

Co-Authors: Juan Liu, Zhaomin Wu, Binrang Yang, Lu Liu

**Object**:

Autistic traits (ATs) were frequently reported in children with ADHD. This study used network analysis to explore the characteristics of ATs in children with ADHD and their associations with ADHD symptoms and executive functions (EFs).

**Method**:

A total of 264 children with ADHD were recruited. Network analysis included 27 ATs symptoms from ASSQ scale (divided as social interaction, communication and restricted repetitive behavior) , 18 ADHD symptoms from ADHD-RS scale, and 8 EFs factors from BRIEF scale. Gaussian Graph Model(GGM) was built and got expected influence (EI) to identify central symptoms. Bayesian Network was constructed and displayed as directed acyclic graphs (DAG).

**Discussion**:

In the ATs network, social interaction symptoms were central in the GGM and drove other ATs symptoms in the DAG. In the ATs-ADHD network, social interaction symptoms remained central and correlated with ADHD inattentive symptoms. In the ATs-ADHD-EFs network, while direct associations between ATs and ADHD were limited, both were significantly linked to EFs, particularly planning and working memory.

**Conclusion**:

Social interaction symptoms show more significance of ATs in children with ADHD; the correlations between ATs and ADHD symptoms are primarily driven by deficits in EFs.

**Do you have any conflicts of interest?**

No

**P-12-007**

**Social functioning among children with ADHD: The role of emotion dysregulation | ID #26**

Abstract Submitter: Eva Goldhagen

Co-Authors: Melissa Hernandez, Margaret Johansson, Madeline Curzon, Leanett Reinoso, Anthony Dick, Paulo Graziano

## **Object**:

To a) understand differences in social information processing (SIP) between typically developing (TD) children and young children with ADHD using a behavioral task and b) examine the role of four domains of emotion dysregulation (ED) (i.e. emotion recognition/understanding, emotion regulation, emotion reactivity/lability, callous-unemotional behaviors) in predicting peer functioning among young children with ADHD in a real-world setting.

## **Method**:

The current sample included 323 children (68.7% boys; mean age = 5.47, SD = 0.77, 81.4% Hispanic) with ADHD (n=175) and TD (n=148). To examine differences in SIP, children were presented with peer provocation situations and asked to report affective and behavioral responses. ED was measured using parent/teacher report and behavioral observation. Peer functioning was examined via sociometric measures administered in an ADHD summer camp setting.

## **Discussion**:

ANCOVAs revealed that children with ADHD were more likely to endorse happy emotions and aggressive responses, and less likely to endorse sad emotions and prosocial responses (Cohen's d range= -.47-.33) to peer provocation. Linear regressions indicated significant associations between all four domains of ED and the six peer functioning outcomes (βs range from -.17 to .33). Global emotion regulation most consistently predicted peer functioning.

## **Conclusion**:

Findings contribute to our understanding of the underlying processes that impact young children with ADHD's social functioning. Specifically, it highlights how the typical social impairments associated with young children with ADHD may be attenuated by better emotion regulation. Discussion focuses on how early intervention efforts can target emotion dysregulation as a mechanism for improving social outcomes.

## **Do you have any conflicts of interest?**

No

**P-12-008**

**Executive function deficits in preschool children at risk of ADHD: A novel task measuring cognitive flexibility | ID #57**

Abstract Submitter: Chia-Fen Hsu

Co-Authors: Chia-Fen Hsu, Ting-An Shih

## **Object**:

Executive function is a cognitive challenge in children with Attention-Deficit Hyperactivity Disorder (ADHD). This study introduced the Ballon Pop Game (BPG), a novel touchscreen-based task inspired by the Children's Color Trails Test to measure cognitive flexibility. Additional tasks are included to assess work memory and inhibition. These tools are used to explore executive function deficits in preschoolers at risk of ADHD.

## **Method**:

To date, 25 children have completed the assessment, including 7 girls and 18 boys, with an average age of 52.76 months (SD=11.72). Among these participants, five scored above the 80th percentile cutoff on the ADHD rating scale, and two scored above the 93rd percentile cutoff. We divided the participants into two groups using the 80th percentile cutoff. Group differences in executive function performance were analyzed using independent t-tests.

## **Discussion**:

There were significant differences between the ADHD risk group and controls in the reaction time, sequence error and color error of BPG. The tool developed by this study appears to be ideal to be used to explore executive function.

## **Conclusion**:

The preschool years are a critical period for the development of executive function. Assessing performance of executive function may offer valuable insights for parents and educators, helping create an environment conducive to cognitive development.

## **Do you have any conflicts of interest?**

No

**P-12-010**

**Attenuated sensitivity to initiatory-actions among ADHD: The role of multiple-stages and temporal-delay | ID #226**

Abstract Submitter: Gili Katabi

Co-Authors: Nitzan Shahar

**Object**:

Attention-Deficit/Hyperactivity Disorder (ADHD) is characterized by reduced sensitivity to initiatory actions compared to terminal actions. In this study, we employ state-of-the-art reinforcement learning modeling to investigate whether the reduced valuation of initiatory actions in individuals with ADHD is influenced by the multi-stage structure of decision-making tasks or by the temporal delay between initiatory actions and their outcomes.

**Method**:

Participants diagnosed with ADHD and non-ADHD individuals were assessed using the semi-structured diagnostic interview DIVA and completed a sequential decision-making task. This task was designed to dissociate the effects of task structure (multiple stages) from those of temporal delay on internal action-values. In addition, reinforcement learning algorithms were used to estimate internal action-values.

**Discussion**:

Our findings aim to replicate previous evidence of an ADHD-related deficit in utilizing action-outcome associations across different stages. Importantly, we examine whether this deficit is influenced not only by temporal delays but also by the structure of the task, particularly the presence of multiple stages.

**Conclusion**:

This study aims to confirm and extend prior findings on ADHD-related deficits in linking actions with outcomes. By employing a novel experimental design and reinforcement learning modeling, we aim to elucidate the value-based mechanisms underlying inconsistent decision-making in ADHD. We hope these insights will have an impact on the understanding of value-based cognitive processes contributing to ADHD-related behavioral challenges.

**Do you have any conflicts of interest?**

No

**P-12-011**

**Working memory load and inhibition performance among children with ADHD | ID #321**

Abstract Submitter: Ibrahim Orhan

Co-Authors: Dr. Isin Paralik

**Object**:

Inhibition is a critical executive function for stopping routine responses and facilitating planned behaviour. Findings in the literature suggest that the central executive component of working memory and resource allocation could play a role in atypical inhibition performance. The present study investigated whether varying maintenance demand would influence inhibition performance among children with and without ADHD.

**Method**:

The study sample comprised 80 children aged between 7 and 11 (60 males and 20 females; Mage = 9.01). For the first time in the literature, participants completed a Go/no-go Task with four levels of gradually increased working memory load. The data was analysed by mixed repeated measures ANOVA.

**Discussion**:

There was no significant difference in inhibition performance between the two groups when there was no working memory load. The inhibition performance of the ADHD group gradually declined in the presence of load. They performed the worst under the heaviest load condition, whereas the control group's performance improved. The findings are interpreted in light of the resource allocation theory of attention.

**Conclusion**:

It was concluded that introducing working memory load has a large negative impact on the inhibition performance of the ADHD group but not the control group. Results suggest that children with ADHD could not allocate enough resources to meet the increased task demand for optimal inhibition performance.

**Do you have any conflicts of interest?**

No

**P-12-012**

**Sign-and-goal tracking in children with and without ADHD | ID #309**

Abstract Submitter: Kokila Perera

Co-Authors: An-Katrien Hulsbosch, Jeff Wickens, Bozena Silic, Brent Alsop, Emi Furukawa, Gail Tripp

## **Object**:

ADHD is a common neurodevelopmental disorder where altered sensitivity to reinforcement has been proposed to contribute to its symptoms. The Dopamine Transfer Deficit hypothesis (DTD) proposes impaired conditioning to reward-predicting cues in ADHD. Here we study the sensitivity of children with and without ADHD to rewards (goal) and cues (sign). We predict children with ADHD will engage in more goal-tracking and less sign-tracking behavior.

## **Method**:

Six-to-12-year-old children meeting DSM-5 criteria for ADHD and typically-developing children complete a computer-based sign-and-goal tracking task. Button responses and attention (gaze fixations) on the sign and goal stimuli are recorded. Group comparisons of response allocation, eye tracking, and the Pavlovian Conditioned Approach index (PCA) will be used to compare the sensitivity to the cue versus reward. Data collection is currently ongoing.

## **Discussion**:

Preliminary data analysis with the ADHD group data suggest the children show greater gaze fixation and allocate more responses to the cue, than the goal, during cue presentation. The PCA index scores suggest intermediate responding between sign and goal-tracking. Correlations between gaze fixation and responses are small suggesting limited overlap in the information these measures are capturing.

## **Conclusion**:

Group comparisons of sensitivity to rewards and cues in children with and without ADHD will be presented in the poster. The extent to which the findings provide support for the DTD hypothesis will be discussed together with any clinical relevance for children with ADHD.

## **Do you have any conflicts of interest?**

No

**P-12-013**

**An assessment of facial emotion recognition and callous-unemotional traits in children with ADHD: An eye-tracking study | ID #206**

Abstract Submitter: Meihui Qiu

Co-Authors: Jiabei He, Jinsong Zhang

### **Object**:

Difficulties in recognizing emotions are associated with callous-unemotional (CU) traits, which are predictors of a heightened risk for severe antisocial behavior. This study analyzed the gaze patterns in response to emotional stimuli in children with ADHD, employing eye-tracking technology with Asian facial images.

### **Method**:

A cohort of 81 children, aged 6–15, participated in a free-viewing test, completed the inventory of callous-unemotional traits, and were assessed using the Chinese version of SNAP-IV as reported by parents. The participants' gaze patterns in response to various facial emotional expressions were meticulously recorded using the Tobii Pro X3-120 eye-tracking system.

### **Discussion**:

The impact of callous-unemotional traits and core ADHD symptoms on fixation points revealed no significant effects on the average number or the distribution of fixation points across different emotional expressions. However, higher levels of callous-unemotional traits and core symptoms of ADHD were associated with fewer fixation points on the eye region.

### **Conclusion**:

These findings contribute to understanding the visual processing patterns in children with ADHD during emotion recognition and highlight the potential of using eye-tracking to explore the underlying mechanisms of callous-unemotional traits. This knowledge could be crucial for developing strategies to enhance the social functioning and address the social difficulties faced by individuals with ADHD.

### **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

**P-12-014**

**Executive function and attentional control in ADHD: comparison between presentations, a study in adolescents**

**| ID #246**

Abstract Submitter: Iliana Sandoval

Co-Authors: Janeth Torres, Yaira Chamorro

**Object**:

To determine what measures of executive functions and attentional control differ between the most frequent ADHD presentations: inattentive and combined.

**Method**:

Three groups: inattentive ADHD (n=32, age 14±0.9), combined ADHD (n=16, age 14.1±0.7), and controls (n=48, age 13.9±0.9).

Executive functions were assessed with Stroop, Go/NoGo (inhibitory control), Digits, Corsi BlockTapping (working memory), Flanker, Wisconsin Card Sorting (shifting), and Continuous Performance Task (attentional control).

Groups were compared using Kruskal-Wallis test and Benjamin-Hochberg correction

**Discussion**:

Differences in Executive Functions were found only in the flanker task: combined-ADHD showed fewer correct responses in the mixed condition vs. Controls (H=6.43, p.BH=0.02, r=0.44).

For attentional control, Controls had a higher sensitivity index (d') than combined-ADHD (H=13.73, p.BH=0.0008, r=0.59) and inattentive-ADHD (H=13.73, p.BH=0.01, r=0.33).

No differences were observed between ADHD subtypes.

**Conclusion**:

Our results suggest that, diminished shifting abilities distinguishes combined but not inattentive ADHD presentation during adolescence. Alertness levels was diminished in both presentations.

**Do you have any conflicts of interest?**

No

**P-12-015**

**Association between serum interleukin-6, brain-derived neurotrophic factor, neuropeptide galanin, and cognitive profile in unmedicated adults with ADHD | ID #414**

Abstract Submitter: Zuzanna Rosa

Co-Authors: Joanna Wozniak, Jakub Kazmierski

**Object**:

The study aimed to determine whether adults with attention-deficit/hyperactivity disorder (ADHD) differ significantly compared to healthy controls, in terms of cognitive functioning and serum concentration of interleukin 6 (IL-6), brain-derived neurotrophic factor (BDNF) and neuropeptide galanin (GAL). The second purpose was to analyse whether there is a link between the aforementioned biomarkers and cognitive profile.

**Method**:

Participants completed the Adult ADHD Self-Report Screening Scale for DSM-5 (ASRS-5). The diagnosis was confirmed based on an interview with a clinician. Participants (age range 21-55) with adult ADHD (N=78) and the control group (N=62) performed a series of cognitive tests using the CVS Vital Signs computer test battery. Serum samples for ELISA assays laboratory analysis were collected from each subject.

**Discussion**:

Adults with ADHD scored significantly worse on tests measuring verbal memory, reaction time, complex attention, cognitive flexibility, processing speed, executive functions, working memory, and sustained attention. Patients with ADHD differed significantly in terms of IL-6 (pg/ml) serum concentration (Me: 0.99 vs. 0.6; p=0.002). Several cognitive scores correlated with the concentration of selected biomarkers in both groups.

**Conclusion**:

Adults with ADHD more often than healthy controls score worse on tests measuring the level of cognitive functioning. The above results indicate that the results of cognitive tests correlate only slightly with the concentration of IL-6, galanin, and BDNF. The results also suggest that inflammatory markers, such as IL-6, may play a significant role in the pathogenesis of ADHD.

**Do you have any conflicts of interest?**

No

**P-12-016**

**Overt and covert emotion processing in adults with ADHD: An ERP study | ID #31**

Abstract Submitter: Shoou-Lian Hwang-Gu

Co-Authors: Yi-Ying Su

## **Object**:

This study aims to explore whether the emotion interference deficits in adults with ADHD result from impairments to either the top-down processing or the bottom-up processing.

## **Method**:

20 adults with ADHD at risk (mean age = 23.35 ± 2.68) and 24 healthy control (mean age = 24.21 ± 5.12) from the hospital in North Taiwan completed an overt/covert emotion task comprised of stimuli, which are various emotional faces (angry, happy, and fearful) with different colored squares (magenta, yellow, blue). Two pathways were indexed by two ERP components, early posterior negativity (EPN) and late positive potential (LPP).

## **Discussion**:

At the overt condition, we observed a larger EPN and LPP, more errors, and slower RT in response to angry and fearful compared to happy faces, indicating the difference in emotion processing between positive and negative expressions. Furthermore, at the covert condition, the ADHD group, in response to the fearful stimuli, demonstrated larger LPP (700~1000 ms) than the control.

## **Conclusion**:

It showed the fearful stimulus was responsible for the emotion interference deficit related to the top-down pathway among adults with ADHD at risk. That implies that emotion interference deficits result from the impairments to top-down processing in response to covert fearful stimuli.

## **Do you have any conflicts of interest?**

No

**P-13-001**

**Cortical gyrification predicts initial treatment response in adults with ADHD | ID #300**

Abstract Submitter: Jonathan Laatsch

Co-Authors: Frederike Stein, Simon Maier, Swantja Matthies, Esther Sobanski, Barbara Alm, Ludger Tebartz Van Elst, Axel Krug, Alexandra Philipsen

**Object**:

As the need for personalised treatment grows, predicting outcomes for adults with ADHD remains underexplored. Recent interest highlights the brain's surface and its link to treatment response. We explored how cortical gyrification might predict response to psychotherapy or clinical management combined with methylphenidate or placebo after a 12-week intensive treatment.

**Method**:

ADHD-symptomatology and cortical gyrification index were investigated using 121 T1-weighted anatomical scans of adult patients with ADHD, correlating treatment outcome with cortical gyrification at baseline. All brain structural analyses were conducted using the threshold-free cluster enhancement (TFCE) approach and the Computational Anatomy Toolbox (CAT12) within the Statistical Parametric Mapping Software (Matlab Version R2021a).

**Discussion**:

Results revealed significant positive and negative associations between cortical gyrification and overall ADHD-symptom alleviation across three symptom dimensions in predominantly frontal structures in the left hemisphere. Our findings emphasise that increased cortical gyrification in frontal cortical regions signifies enhanced treatment efficacy following a 12-week intervention.

**Conclusion**:

Our findings suggest cortical gyrification as a biomarker for predicting ADHD treatment response in adults. Significant associations between frontal cortical gyrification and symptom alleviation highlight its potential in guiding personalised care. Further research is needed to confirm these results, enabling more targeted treatments, reducing drug-related side effects, and improving therapeutic outcomes for adults with ADHD.

**Do you have any conflicts of interest?**

No

**P-13-002**

**Quantitative susceptibility mapping (QSM) of brain iron in adult ADHD and its relation to core symptoms and depression | ID #134**

Abstract Submitter: Marcel Schulze

Co-Authors: Silke Lux, David Coghill, Tim Silk, Alexandra Philipsen

## **Object**:

Quantitative susceptibility mapping (QSM) detects local changes in magnetic susceptibility induced by brain iron. Iron's critical role in dopamine synthesis links it with dopaminergic function, which is dysregulated in ADHD. While studies on children show reduced iron, no study has specifically examined adults. This study employs QSM to investigate brain iron in adults with ADHD and examines its correlations with core ADHD and depressive symptoms

## **Method**:

Whole-brain 3 Tesla QSM-data of 49 participants (nADHD= 25, mean age: 30.08 (9.3); ncontrols=24, mean age: 26.88 (6.3)) were analyzed with the Morphology Enabled Dipole Inversion (MEDI) approach as it is implemented in the Ironsmith toolbox.

For group comparisons, analysis of variance (ANOVA) was performed. Correlational analysis of iron values was performed for core symptoms, childhood symptoms, and depression. All results were FDR-corrected

## **Discussion**:

Lower brain iron in ADHD was observed in the left entorhinal cortex (p=0.026) and fusiform gyrus (left: p=0.011, right: p=0.015), but failed to survive FDR-correction. Higher susceptibility emerged in the right putamen (p=0.029) and thalamus (p=0.036). Childhood ADHD correlated negatively with left fusiform gyrus (r=-0.41) and positively with left putamen (r=0.32). Depressive symptoms correlated positively with left parietal gyrus (r=0.43).

## **Conclusion**:

The study reveals altered brain iron susceptibility in adults with ADHD, particularly in regions involved in attention and memory. The results underscore brain iron's potential role in the neurodevelopmental trajectory of ADHD and emphasize the need for further research to explore how iron homeostasis may influence symptom progression and cognitive function across the lifespan in these individuals.

## **Do you have any conflicts of interest?**

No

**P-13-003**

**ADHD and major depressive disorder shared abnormalities in the corpus callosum in adolescents and young adults: A white matter-based meta-analysis | ID #205**

Abstract Submitter: Kangfuxi Zhang

Co-Authors: Huaijin Guo, Qingjiu Cao

**Object**:

Adolescents and young adults (≤25 years) with major depressive disorder (MDD), particularly treatment-resistant MDD, often exhibit comorbid attention-deficit/hyperactivity disorder (ADHD), which is potentially due to shared brain abnormalities. To better understand the shared neurological basis of ADHD and MDD, we conducted this meta-analysis of white matter (WM) studies.

**Method**:

We conducted a systematic literature search of PubMed, Web of Science, and EMBASE databases to identify disorder-shared abnormalities of WM in adolescents and young adults with ADHD and MDD. A total of seven ADHD and seven MDD datasets were included in this meta-analysis. AES-SDM software was applied to detect shared abnormalities in fractional anisotropy (FA) in ADHD or MDD participants compared to typically developing individuals.

**Discussion**:

We found that ADHD and MDD in adolescents and young adults shared decreased FA in the splenium of corpus callosum (CC) and left anterior thalamic projections (ATP). Abnormalities in these WM regions may underlie shared cognitive deficits in ADHD and MDD. The abnormalities in the splenium of CC may lead to attention and information processing deficits, while the abnormalities in the ATP lead to deficits in emotional regulation and decision-making.

**Conclusion**:

Our findings highlight shared WM abnormalities in the splenium of CC and left ATP in adolescents and young adults with ADHD and MDD. These abnormalities may contribute to overlapping cognitive deficits, providing evidence for a common neurobiological basis underlying both disorders.

**Do you have any conflicts of interest?**

No

**P-13-004**

**Different functional brain abnormalities related to visuospatial attention between children and adults with ADHD | ID #117**

Abstract Submitter: Yu Zhu

Co-Authors: Yu Zhu, Xiangsheng Luo, Chen Dang, Yuan Feng, Guisen Wu, Shaogen Zhong, Yufeng Wang, Yan Song, Li Sun

**Object**:

Previous studies found that abnormal cognitive function of individuals with ADHD may have different neural bases in childhood and adulthood. Adults with ADHD can effectively activate the frontal lobe for cognitive processing, while brain areas related to cognitive processing are often under-activated in children with ADHD. This study explored the differences in brain activity related to visuospatial attention in children and adults with ADHD.

**Method**:

The study included 44 children with ADHD, 36 child healthy controls (HC), 29 adults with ADHD and 37 adult HC. All subjects completed visuospatial attention tasks of attention selection (task A) and attention suppression (task B) in MRI scans. Task-evoked whole-brain activation and functional connectivity (FC) were analyzed. The correlations between neural activity intensity and task behavior performance were analyzed.

**Discussion**:

The left supplementary motor area (SMA) activation in task B decreased in children, and the left lingual gyrus activation in task A decreased in adults. The FC between the left lingual gyrus and bilateral frontal lobes in task A increased in children, and FC between the left SMA and the left insula in task B decreased in adults. The left SMA activation was negatively correlated with correct reaction time in children with ADHD.

**Conclusion**:

Children with ADHD showed reduced frontal lobe activation in visual-spatial attention tasks, confirming that their frontal lobe function might be underdeveloped. Adults with ADHD showed reduced occipital lobe activation, which might reflect their potential primary perceptual deficits. These findings may provide a basis for selecting evaluation indicators for treatment target and prognosis for ADHD.

**Do you have any conflicts of interest?**

No

**P-13-005**

**Neural activation during cognitive reappraisal predicts illness severity and emotion dysregulation in adults with ADHD: A task-based fMRI study | ID #197**

Abstract Submitter: Ziqing Zhu

Co-Authors: Ziqing Zhu, Jiahua Xu, Qianrong Liu, Yuan Gao, Haimei Li, Xinyi Zhang, Qingjuan Lai, Yufeng Wang, Qiujin Qian, Lu Liu

**Object**:

Emotion dysregulation has been considered as a core component inherent to attention-deficit/hyperactivity disorder (ADHD), which is a major contributor to impairment throughout their lifespan. However, there lack a detailed characterization of the neurobiological underpinnings of emotion regulation deficits in ADHD and their correlation with clinical traits of ADHD.

**Method**:

105 adults with ADHD and 70 controls completed cognitive reappraisal (CR) task to either reappraise or passively view neutral and negative images. Whole-brain activity of each trial was examined and compared, following representational similarity analysis (RSA) to determine between-group activation similarity. Above-observed imaging features were further analyzed to explore correlation with core symptom and emotional dysregulation manifestation.

**Discussion**:

ADHD showed higher emotion intensity but lower emotion regulation capacity during CR. Reduced activation in left posterior cingulate, inferior frontal gyrus (IFG), right dorsolateral prefrontal and inferior occipital gyrus were detected in ADHD during CR, exhibiting relations with symptom severity and emotion control impairments. RSA indicated that less group-wise similarity between IFG activations links to more emotion control deficits of ADHD.

**Conclusion**:

Adults with ADHD may have impaired emotion regulation of using cognitive reappraisal, involving activation dysfunction in cognitive control and sensorimotor regions. Furthermore, these neurobiological underpinnings may lead to the emotion dysregulation and illness severity of ADHD.

**Do you have any conflicts of interest?**

No

**P-13-006**

**Multimodality-based graph convolutional networks for classification of adults with ADHD and detection of potential neuroimaging genetics biomarkers | ID #131**

Abstract Submitter: Ziqing Zhu

Co-Authors: Yufei Liu, Qianrong Liu, Xinxin Yue, Yuan Gao, Ningning Liu, Haimei Li, Yufeng Wang, Qiujin Qian, Wenjian Bi, Lu Liu

**Object**:

Integrating multimodal data across neuroimaging genetics may enhance the diagnosis and understanding of adults with attention-deficit/hyperactivity disorder (aADHD). However, most studies only focused on classification via machine learning, lacking detailed explanations of unimodal biomarkers or relationships among multimodal data.

**Method**:

We collected MRI and genomics data from 247 aADHD and 237 controls and trained fused features via Edge-Variational Graph Convolution Network. Functional connectivity (FCs) and single nucleotide polymorphisms (SNPs) contributing to aADHD were identified through sensitivity analysis, validating by calculating clinical correlations. Downstream association analyses were conducted to explore genetic components linked to salient imaging alterations.

**Discussion**:

Our model achieved an accuracy of 73.55% (AUC: 0.791). The most salient FCs located in limbic, and default mode networks, among which FC between right precuneus (PCun) and parahippocampal gyrus correlated with ADHD symptoms. Key hub in the right PCun correlated with hyperactivity/impulsivity and executive function by its topological properties. Deficient FC of the hub associated with genetic variant of HDAC9 and expression profiles of COL19A1.

**Conclusion**:

These findings highlight the effectiveness and interpretability of the multimodality-based graph convolution network in discriminating aADHD. The functional alterations in the right PCun and its related genetic profiles are suggested important in the neurology of aADHD.

**Do you have any conflicts of interest?**

No

**P-13-007**

**Pilot trial of image outcome of executive skill training (multi-component cognitive behaviour therapy) for adolescent ADHD | ID #218**

Abstract Submitter: Zhao Fu

Co-Authors: Zhao Fu, Li Yang, Ying Qian

## **Object**:

Executive skill training (EST) is a multi-component cognitive behavioral group therapy delivering for attention-deficit/hyperactivity disorder (ADHD) children and their supporting system, which combines behavioral therapy and cognitive training. It helps children to improve behavioral strategies and executive deficits, and parents/ teachers to better manage and support children. This pilot study evaluated image outcome of EST for adolescent ADHD.

## **Method**:

9 ADHD adolescents (aged 11.67) accepted EST. Resting-state fMRI data was collected and measured by alterations of fractional amplitude of low frequency fluctuation (fALFF) at baseline and post treatment. ADHD symptoms, ecological and performance-based executive functions were assessed by Behavior Rating Inventory of Executive Function and Cambridge Neuropsychological Test Automatic Battery (CANTAB). Paired-t and non-parametric tests were used.

## **Discussion**:

1 cluster in left cerebellar fusiform showed increased fALFF post treatment. (Voxels number: 90, Peak MNI coordinate: -27 -69 -18, Peak intensity: 8.761) It showed significant differences in ADHD symptom scores (inattention, total: 95 CI%: [-5.513, -.931], [-9.226, -.663]; p=.012, .029) and items (inattention, total: 95 CI% [-3.809, -.525], [-5.399, -.934]; p=.016, .011). Delay of gratification improved in CANTAB (95 CI% [.019, .144], p =.019).

## **Conclusion**:

The EST had potential to bring executive function related image change. It also had potential effects reducing symptoms and enhancing executive functions. Randomized controlled trial was required.

## **Do you have any conflicts of interest?**

No

**P-13-008**

**The function of subcortical regions can predict the efficacy of methylphenidate for children with ADHD | ID #261**

Abstract Submitter: Zhao Fu

Co-Authors: Shenghan Bi, Shaoxian Li, Qingjiu Cao, Shuyu Li, Li Yang

### **Object**:

Methylphenidate (MPH) could improve the clinical symptoms of children with ADHD but the lack of predictors of treatment response poses great challenges for precision therapy. Subcortical regions play an important role in the psychopathology of ADHD and mechanism of methylphenidate. The current study combined the function of subcortical regions and machine learning to predict the efficacy of MPH on children with ADHD.

### **Method**:

Eighty-three children with ADHD were treated by MPH for 12 weeks, with standard titration process. Clinical symptoms were assessed by ADHD-rating scale (ADHD-RS) in baseline and week-12. All participants accept the rs-fMRI scan before treatment. Supportive vector machine model was applied to classify the treatment response, with the functional connectivity strength (FCS) of whole brain and subcortical regions as the input characteristics.

### **Discussion**:

The SVM modelling reached a classifying accuracy of 0.68 (sensitivity (recall) 0.68, specificity: 0.55) by using FCS of all brain regions, with 5-fold cross validation. And the classifying accuracy was 0.75 (sensitivity (recall) 0.83, specificity: 0.67) by using FCS of subcortical brain regions, with 5-fold cross validation, when the penalty parameter C is set to 1.0; a linear kernel function is used (kernel='linear').

### **Conclusion**:

The functions of subcortical regions could predict the response to MPH of children with ADHD, which might be helpful to develop the biomarker for the treatment response, and underpinning the precision therapy.

### **Do you have any conflicts of interest?**

No

**P-13-009**

**Circuits mechanism underlying the handwriting skills on boys with ADHD through functional near-infrared spectroscopy | ID #458**

Abstract Submitter: Ren Yuanchun

Co-Authors: Zhu Xiaotong

## **Object**:

The objective is to provide theoretical basis for the formulation of motor intervention in children with attention deficit hyperactivity disorder (ADHD).

## **Method**:

55 school-aged boys with ADHD (average age of 8.47±1.17years old) were recruited .83 typically developing boys were recruited as a control group(average age of 8.42±1.10 years old). The NIRSport Near-Infrared Imaging were collected during school-aged boys drawing trajectories, writing Chinese characters “山、川、八”, "0-9", and "A-Z" as well as . Independent sample t-tests and one-way ANOVA were used with a significance level set at α=0.05.

## **Discussion**:

The β value of the right dorsolateral prefrontal cortex of younger ADHD boys were higher than that of normal control when drawing trajectories and lower than that of normal boys when writing Chinese characters ($P<0.05$); for older ADHD boys, the β value of the right orbitofrontal cortex and right dorsolateral prefrontal pathway were higher than that of normal boys ($P<0.05$) during drawing trajectories and English letters ($P<0.05$ for all).

## **Conclusion**:

The handwriting skill deficits on ADHD boys may induced by inadequate activation of spatial cognitive brain regions. The underlying neural mechanisms vary heterogeneously across different ages.

## **Do you have any conflicts of interest?**

No

**P-13-010**

**Decreased brain activity within the dorsolateral prefrontal cortex in adolescents during attention stimulation tasks: A functional near infrared spectroscopy study | ID #127**

Abstract Submitter: Hyun-Chan Hwang

Co-Authors: Yuna Hong, Sung Ah Jung, Doug Hyun Han

### **Object**:

Adolescents with attention deficit hyperactivity disorder (ADHD) experience difficulties in executive function due to dysfunction in the prefrontal region of the brain. The aim of this study is to compare brain activation during attention tasks in adolescents withADHD and Typically Developing (TD) individuals using functionalnear infrared spectroscopy (fNIRS).

### **Method**:

A total of 68 adolescent participants (30 ADHD, 38 TD, ages 13-18) were assessed using the Korean ADHD Rating Scale (K-ARS), Comprehensive Attention Test (CAT), Korean Beck Depression Inventory-II (K-BDI-II) and Korean Beck Anxiety Inventory (K-BAI). Brain activation during the Stroop color and word Test was measured with fNIRS. Data on psychological scales, cognition related tests and brain activation data were analyzed.

### **Discussion**:

The ADHD group did not exhibit significant changes in the difference of oxygenated hemoglobin between resting and task performance in the Dorsolateral prefrontal cortex (DLPFC) during task performance. Negative correlation was found between DLPFC oxygen saturation and clinical characteristics as measured by the K-ARS. Correlations were also observed between DLPFC ΔaccHbO2 and cognitive function measured by the CAT.

### **Conclusion**:

This study confirmed distinct brain activation patterns in the DLPFC forADHD adolescents during attention tasks. fNIRS effectively measured these differences, contributing to understanding the developmental trajectory of ADHD in adolescents and providing evidence of functional impairments in complex attention tasks.

### **Do you have any conflicts of interest?**

No

**P-13-012**

**Using functional near-infrared spectroscopy to visualize cerebral hemodynamic changes in children with ADHD: A pilot study on brain function and methylphenidate discontinuation | ID #486**

Abstract Submitter: Yukifumi Monden

**No Abstract text available**

**P-13-013**

**A developmental approach in analyzing the relationship between neuromelanin-MRI signal in the substantia nigra and ADHD symptoms in children | ID #393**

Abstract Submitter: Philippe Robaey

Co-Authors: Rami Al-Haddad, Synthia Guimond, Clifford M Cassidy

## **Object**:

In recent years neuromelanin-sensitive MRI (NM-MRI) has been applied to directly assay dopamine system function in the context of psychiatric disorders. We used the NM-MRI to test the hypothesis of a hypodopaminergic activity in the substantia nigra (SN) during development.

## **Method**:

35 neurotypical participants and 30 diagnosed with ADHD aged 6-17 completed neuroimaging including a NM-MRI scan. We assess symptoms of ADHD using a subscale of the Child Behavior Checklist (CBCL) and working memory (WM) using the list sorting WM task from the NIH toolbox. A developmentally relevant subregion of the SN was defined that showed increased NM-MRI signal in older participants within the neurotypical group (517/1948 SN voxels, 27%).

## **Discussion**:

Controlling for age and sex, ADHD youth showed significantly reduced NM-MRI signal in this SN developmentally sensitive subregion compared to the neurotypical group ($t_{61}=2.40$, $p=0.020$). Within the ADHD group, lower signal in this SN subregion correlated to worse ADHD symptoms ($t_{20}=-3.53$, $p=0.002$) and poorer working memory performance ($t_{23}=2.64$, $p=0.015$).

## **Conclusion**:

Independently of age and sex, children with ADHD showed a decreased NM signal in a developmentally sensitive region of the SN, supporting the hypodopaminergic hypothesis

## **Do you have any conflicts of interest?**

No

none

**P-13-014**

**Exploring the neural basis of reaction time variability at the trial level in ADHD | ID #29**

Abstract Submitter: Leanne Tamm

Co-Authors: Jonathan Dudley, Sarah Karalunas, John Simon, Thomas Maloney, Gowtham Atluri, Jeff Epstein

**Object**:

Most research investigating the neurological basis for ADHD-related reaction time variability (RTV) examines associations between brain activation and summary indicators, e.g., standard deviation of reaction time (SDRT). However, summary indicators reflect whole-task RTV; RTV results from episodic fluctuations. We examined trial level associations between RTs and brain activation in children with and without ADHD.

**Method**:

Stop signal task RT data was obtained for 5,719 children; 422 with ADHD. Trial-level RTs were converted to z-scores. Principal components analysis (PCA) was performed on image features. BOLD-z-score associations were estimated by performing amplitude-modulated linear regression fit of residuals to the z-score timeseries convolved with a canonical hemodynamic-response function; group differences were explored using PCA.

**Discussion**:

Longer RTs were associated with more task + activation and less task – activation, and these associations were weaker in the ADHD group. Of the 10 components, the first had a significant ADHD main effect; ADHD participants had lower component scores. Positive weights were strongest in right-lateralized frontoparietal, dorsal and ventral attention, and somatomotor networks. Negative weights were strongest in left-lateralized default mode network.

**Conclusion**:

The z-score approach may be a promising candidate for investigating neural mechanisms related to RTV in ADHD.

**Do you have any conflicts of interest?**

No

**P-13-017**

**Increased amygdala connectivity instability in children with ADHD and social dysfunction: A static and dynamic functional connectivity analysis | ID #339**

Abstract Submitter: Kangfuxi Zhang

Co-Authors: Qingjiu Cao

## **Object**:

Attention deficit hyperactivity disorder (ADHD) often exhibit a high prevalence of social dysfunction (SD), with estimates ranging from 52% to 82%. The amygdala, a key region involved in social processing, may show alterations in functional connectivity in ADHD, particularly in those with SD. This study investigates amygdala connectivity in children with ADHD and SD using both static and dynamic functional connectivity (FC) analyses.

## **Method**:

The Social Responsiveness Scale (SRS-1) T score of 60 was used to assess and categorize ADHD participants with or without SD. A total of 53 ADHD with SD (ADHD+SD) children, 71 ADHD without SD children, and 72 age-matched typically developing controls (TDC) were included. One-way analysis of variance (ANOVA) was used to compare whole-brain static and dynamic FC based on amygdala subregions across the three groups.

## **Discussion**:

Static FC analysis showed that the FC patterns were generally similar across the three groups. Dynamic FC analysis revealed that the ADHD+SD group had significantly greater FC variability between amygdala subregions and the bilateral superior frontal gyrus, middle frontal gyrus, inferior frontal gyrus, superior occipital gyrus, and middle occipital gyrus compared to ADHD-SD and TDC. The FC variability was significantly correlated with SRS scores.

## **Conclusion**:

The ADHD+SD children exhibited greater instability in dynamic FC between the amygdala and the prefrontal cortex, as well as the occipital gyrus. Additionally, the dynamic FC variability was significantly correlated with social function, especially social communication.

## **Do you have any conflicts of interest?**

No

**P-13-018**

**The effect of atomoxetine and methylphenidate on emotional dysregulation in children with ADHD: A multicenter randomized controlled trial | ID #130**

Abstract Submitter: Yuan Gao

Co-Authors: Zhaomin Wu, Binrang Yang, Meirong Pan, Min Dong, Haimei Li, Yufeng Wang, Qiujin Qian, Li Sun, Lu Liu

**Object**:

This study compares the effects of two commonly prescribed medications for attention-deficit/hyperactivity disorder (ADHD), atomoxetine and methylphenidate, on emotional dysregulation (ED) in children with ADHD.

**Method**:

A total of 152 children (7-17 years) diagnosed with ADHD and ED were included. After baseline assessments, participants were randomly assigned to receive ATX or MPH. Dosages were titrated to the optimal level, followed by a four-week maintenance phase before final evaluations. Mixed linear models compared core symptoms and ED changes. Functional connectivity analyses, using amygdala subregions as seed points, explored potential neural mechanisms.

**Discussion**:

Both ATX and MPH led to marked improvements in core symptoms and ED, without significant group differences. When divided by age median (9.17 years), MPH was more effective in reducing ED in the older group. Imaging analyses revealed that the significant increased functional connectivity of amygdala subregions with the left orbital middle frontal gyrus and the left ventral anterior cingulate cortex were positively correlated with ED improvements.

**Conclusion**:

Both ATX and MPH significantly improve core symptoms and ED in children with ADHD, but MPH may be more recommended to improving ED in older children with ADHD. The reduction in ED appears to be associated with enhanced functional connectivity between the amygdala and the prefrontal cortex and anterior cingulate cortex.

**Do you have any conflicts of interest?**

No

**P-14-001**

**A proposal to investigate age-related changes in ADHD: Insights from the THRSP-OE mouse model | ID #88**

Abstract Submitter: Raly James Custodio

Co-Authors: Raly James Custodio, Edmund Wascher, Stephan Getzmann, Eugene Yi, Hee Jin Kim, Bung-Nyun Kim, Jae Hoon Cheong

### **Object**:

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder affecting children (8%) and adults (6.8%) worldwide, with 40-60% of cases persisting into adulthood. This proposal will investigate how ADHD presentations, treatment responses, and neurochemical mechanisms evolve across developmental stages. Using the THRSP-OE mouse model, the study will determine whether childhood and adult ADHD are distinct or part of a continuum.

### **Method**:

This proposal uses a longitudinal approach to examine ADHD behaviors in the THRSP-OE mouse model, focusing on inattention and hyperactivity. Age-specific responses to Methylphenidate and Atomoxetine will be assessed for efficacy and side effects. Neurochemical analyses will quantify dopaminergic, noradrenergic, and thyroid hormone-related factors across ages, providing insights into the molecular mechanisms of ADHD.

### **Discussion**:

This study aims to explore how ADHD symptoms evolve from childhood to adulthood, investigating whether behaviors persist, diminish, or re-emerge. By examining age-dependent neurochemical changes and treatment responses, it will provide insights into the neurobiological mechanisms underlying ADHD progression and inform the development of optimized therapeutic strategies.

### **Conclusion**:

The findings will enhance our understanding of ADHD as a dynamic disorder with distinct developmental phases. By examining age-specific variations in behavior, treatment response, and neurochemical profiles, the study aims to improve insights into its progression, refine diagnostic criteria, and inform more tailored treatment strategies, ultimately advancing the clinical management of ADHD across the lifespan.

### **Do you have any conflicts of interest?**

No

**P-14-003**

**Photobiomodulation therapy may improve impulsivity on ADHD animal model | ID #299**

Abstract Submitter: Yujui Huang

## **Object**:

The pathophysiology of ADHD remains unclear. Previous studies had indicated that neuronal network involved in the regulation of attention, emotion, and behavior. Some patients do not respond to standard pharmacotherapy, limited by side effects and concerns. Photobiomodulation therapy, may achieve enough brain penetration to produce beneficial effects in psychiatric subjects, but these effect on ADHD are not been reported yet.

## **Method**:

The ADHD animal model, male SHR/Izm rats, and Wistar-kyoto/Izm as the control animal respectively. PBMT (808nm, continuous mode, 27.79mW/cm2) applied on both group of rats and evaluated with different exposure time in our study. The two-tailed two-sample t test was used to observe between-group differences. Pearson's correlation coefficients were computed to reveal the relationships between functional coherence and neuropsychological changes.

## **Discussion**:

The group which received PBMT for 25 seconds had significantly improvement in impulsivity symptoms compared to other groups($p<0.05$). The decreased FA(Fractional anisotropy) value within WM(white matter) area, were also found in SHR group compared with WKY group before laser treatment, suggesting the disturbed WM maturation in SHRs. These significant differences of averaged FA values within brain white matter were diminished at SHR25 group.

## **Conclusion**:

In this study, we explored the potential of photobiomodulation therapy as a novel treatment for ADHD. By applying PBMT with a wavelength of 808 nm to the local head region of spontaneously hypertensive rats (SHR), a model of ADHD, for 25 seconds daily over 21 consecutive days, we observed a significant reduction in impulsivity in the SHRs. Further investigate the potential of PBMT for improving cognitive function in human should be considerable.

## **Do you have any conflicts of interest?**

No

**P-14-004**

**Experimental model for immune and metabolic comorbidities in neurodevelopmental disorders | ID #182**

Abstract Submitter: Pavla Nedbalová

Co-Authors: Michaela Fencková

## **Object**:

Neurodevelopmental disorders (NDD) show characteristic symptoms arising from different brain functioning. However, NDD are also often accompanied by comorbidities that stem from the dysfunction in immune system and metabolism. Existing immunometabolic pathologies are further worsening the life quality of affected individuals and have strong correlation with decreased cognitive and adaptive abilities and aberrant behaviour.

## **Method**:

We use the fruit fly, Drosophila and infection with Listeria monocytogenes in genetic models of NDD associated with immunometabolic pathologies to examine immune response and related metabolic changes. We aim to determine the dysfunctional mechanisms and approaches to mitigate them. We also study the impact of acute and chronic inflammation on cognitive function in habituation that is impaired in ADHD and ASD and relates to behavioral deficits.

## **Discussion**:

Brain and immune system are energy demanding tissues. NDD brains show differences in energy metabolism. Alterations in glucose and lipid homeostasis are suggesting changes in systemic energy metabolism. These metabolic abnormalities together with primary genetic causes can further worsen the already malfunctioning immune system.

## **Conclusion**:

It seems crucial to study and understand the metabolic interplay between the brain and peripheral immune system in NDD. We would like to shed light on the mechanisms behind the brain and immune system dysfunction in NDD and the regulation of the metabolic cross-talk between these two systems. Our results can serve novel therapeutic perspectives and pharmacological targets in the future.

## **Do you have any conflicts of interest?**

No

**P-14-005**

**Attention-related impairment and contributing neuroinflammatory signaling in the prefrontal cortex of perinatal nicotine-exposed mice | ID #15**

Abstract Submitter: Sabide Duygu Uygun

Co-Authors: Tansu Bilge Kose, Aslıhan Bahadır-Varol, Burak Uzay, Emine Eren-Koçak

**Object**:

Attention deficit/hyperactivity disorder (ADHD) is linked to high heritability, brain abnormalities, and dopamine/noradrenaline imbalances, with gene-environment interactions being significant. Maternal smoking and low-grade inflammation are implicated, yet neurobiological mechanisms are unclear. This study aims to explore neuroinflammatory signaling in ADHD and assess behavioral and molecular changes in a mouse model.

**Method**:

Perinatal nicotine exposed (PNE) mice were given water containing 300 µg/ml nicotine and 2% sucrose until weaning, unlike the controls, which received only sucrose. This was done to induce ADHD-like behaviors. Behavioral tests confirmed attentional impairment at postnatal week 5. Subsequently, Iba-1 and NF-κB immunolabeling, microglial morphology, and cortical thickness (CT) were analyzed in prefrontal cortex subregions.

**Discussion**:

Increased CT, microglial cell number (Iba-1 level), activity, and NF-κB activation in the anterior cingulate cortex (ACC) may be associated with attention impairment in PNE mice. In PNE mice, increased microglia number and activity in the prelimbic cortex (PL) and infralimbic cortex (IL), and elevated NF-κB activation in the IL were observed, along with anxiety-like behaviors.

**Conclusion**:

Prenatal risk factors like maternal obesity and smoking may trigger inflammation during pregnancy, leading to neuroinflammatory changes and ADHD. More research is needed on genetic predispositions and epigenetic mechanisms linked to environmental factors affecting synaptic pruning and maturation. Our findings emphasize neuroinflammatory signaling in ADHD pathophysiology and could guide future treatments targeting these mechanisms.

**Do you have any conflicts of interest?**

No

**P-15-001**

**Occupational priorities of adults with ADHD who participated in the cognitive-functional (Cog-Fun) intervention | ID #9**

Abstract Submitter: Jennifer Budman

Co-Authors: Adina Maeir, Shahar Vittenberg-Zaguri

**Object**:

There is a limited understanding of occupational priorities among adults with ADHD, a population characterized by executive functioning deficits impacting daily performance. Thus this aimed to describe occupational priorities of adults with ADHD who participated in a cognitive-function intervention.

**Method**:

A retrospective case series design using descriptive analysis. Thirty-nine adults with ADHD (mean age = 34.1 years, SD = 10.4; 53.9% female) who underwent an occupational therapy intervention using the Cognitive-Functional (Cog-Fun) approach and set individualized occupation-based goals using the Canadian Occupational Performance Measure to inform their intervention process.

**Discussion**:

A total of 117 goals were set, with the majority related to occupational categories of instrumental activities of daily living and social participation and the fewest related to basic activities of daily living and rest and sleep. Gender differences were observed in some domains, with men setting more goals related to health management and sleep, while women prioritized instrumental activities of daily living and leisure.

**Conclusion**:

Adults with ADHD may face participation challenges across various occupational domains. Instrumental activities of daily living and social participation activities arose as the main occupational needs prioritized as a reason to seek occupational therapy intervention and support.

**Do you have any conflicts of interest?**

No

**P-15-002**

**Effectiveness of the cognitive–functional intervention for adults with ADHD: Retrospective case series | ID #10**

Abstract Submitter: Jennifer Budman

Co-Authors: Adina Maeir, Shahar Vittenberg-Zaguri

**Object**:

Adults with ADHD experience executive function (EF) impairments affecting quality of life (QoL). Combining medication and non-pharmacological treatments is recommended. The Cog-Fun-A intervention, a meta-cognitive, occupation-based approach, shows promise but needs more research. Thus, this study aims to assess Cog-Fun-A's influence on QoL and EF in adults with ADHD and identify predictors of QoL improvement and adherence.

**Method**:

This retrospective study included 115 adults (39.1% men) aged 19–70, who completed the ADHD QoL measure and BRIEF-A to assess QoL and EF before and after intervention. The Cog-Fun-A program consists of 24 weekly, 1-hour sessions focusing on self-awareness of strengths and ADHD-related executive deficits. It uses education, occupational experience analysis, strategy acquisition, and goal-setting to support achieving personal occupational goals.

**Discussion**:

Among 107 participants, post-treatment scores significantly improved all QoL domains and EFs. Clinically significant QoL changes occurred in 45%, with 34% meeting reliable change criteria. No demographic variables predicted these changes. Female reported gender, frequent pharmacological treatment, and lower baseline BRIEF-A scores predicted intervention completion.

**Conclusion**:

Cog-Fun-A may offer an effective, meta-cognitive occupation-based non-pharmacological treatment for adults with ADHD; however, further research is recommended.

**Do you have any conflicts of interest?**

No

**P-15-003**

**Feasibility and initial effectiveness of the cognitive-functional (Cog-fun) intervention for adults with ADHD in jail | ID #407**

Abstract Submitter: Jennifer Budman

Co-Authors: Anat Meir Abuhatzera, Maayan Cohen, Kathrine Ben-Zvi Bonan, Ifat Velder Shukrun

**Object**:

ADHD increases incarceration risk due to impulsivity, behavioral dysregulation, and social challenges, affecting education, employment, and integration. Few interventions address these needs. This pilot study examined the feasibility and effectiveness of the Cognitive-Functional (Cog-Fun) intervention, a metacognitive-functional approach, in improving functional performance and quality of life (QoL) in incarcerated adults with ADHD.

**Method**:

The study included 11 males (ages 22-46) who received 22 weekly Cog-Fun sessions. QoL was assessed using the Adult ADHD Quality of Life (AAQoL), executive functioning with the Behavior Rating Inventory of Executive Function-Adult (BRIEF-A), awareness via the Integrative Awareness Interview, and functional performance with the Canadian Occupational Performance Measure (COPM). Pre- and post-treatment data were analyzed for changes in these domains.

**Discussion**:

The intervention yielded clinically significant improvements across multiple domains. For AAQoL, highest gains were in Productivity (n=7, 58%) and lowest in Psychological Health (n=3, 27%). EF improved in BRIEF-A subscales (n=7, 58%), with highest in Inhibition, Initiation, and Task Monitoring (n=4, 36%). Awareness improved in most subscales. Nine participants (64%) showed clinically significant COPM gains in at least one functional goal.

**Conclusion**:

The Cog-Fun intervention demonstrated feasibility and potential effectiveness in addressing QoL, EF impairments, awareness, and functional performance in jailed adults with ADHD. While results are promising, further research with a larger sample size is warranted to strengthen the evidence base and optimize intervention delivery for this unique context.

**Do you have any conflicts of interest?**

No

None

**P-15-004**

**ADHD group coaching for adults: Findings from an 8-week in-person manualised program | ID #297**

Abstract Submitter: Marie Enback

### **Object**:

This study evaluates whether a structured, manualised group coaching program for adults with ADHD improves executive functioning, self-awareness, symptom management, and quality of life.

### **Method**:

Seventy-four adults participated in an 8-week program across five sites in Norway. Eleven groups (6-8 each) completed weekly 2.5-hour themed sessions addressing typical ADHD challenges. Sessions included psychoeducation, self-awareness, and co-creation of strategies. Tailored self-report questionnaires were used pre- and post-intervention. Session and outcome rating scales (SRS/ORS) evaluated program quality and progress.

### **Discussion**:

Attendance (91.54%) and completion (96.1%) rates were high. Participants reported improved ADHD knowledge (4.57/5), self-awareness (4.63/5), and symptom management strategies (4.36/5). ORS and SRS ratings (4.65/5 and 4.64/5) highlight the program's efficacy. The program's manualised structure ensures consistency, safety, and measurable outcomes, making it a reliable and scalable intervention for outpatient ADHD care.

### **Conclusion**:

This manualised ADHD group coaching program effectively addresses ADHD challenges, enhances executive functions, and improves quality of life. Its structured and scalable design makes it a valuable addition to ADHD treatment options, particularly in outpatient care.

### **Do you have any conflicts of interest?**

No

This study was conducted by Marie Enback, affiliated with ADHD Norway, and funded by DAM. The author declares no conflicts of interest. All rights to the study and its findings are reserved by Marie Enback.

**P-15-005**

**ADHD group coaching: Comparing young adults in outpatient care and adults in non-clinical settings | ID #335**

Abstract Submitter: Marie Enback


## **Object**:

This study investigates the effectiveness of a manualised ADHD group coaching program in two populations: adults and young adults in outpatient care. It aims to compare outcomes related to self-awareness, executive functioning, and symptom management.

## **Method**:

74 adults and 30 young adults participated in the 8-week program, 5 locations in Norway. Eleven adult groups (6-8 participants each, not in care) and 5 young adult groups in out patent care completed weekly 2.5-hour themed sessions, to address challenges through psychoeducation, co-creation of strategies, and practice.Tailored self-report questionnaires pre-and post-intervention + FIT-scale Outcome and rating scales (SRS/ORS) evaluated program.

## **Discussion**:

Adult participants reported significant improvements in ADHD knowledge (4.57/5), self-awareness (4.63/5), and management strategies (4.36/5). Young adult data will be analyzed upon program completion, with early indications suggesting similar but lower engagement and some drop outs.. The study emphasises the importance of standardisation for safety, consistency, and measurable results in outpatient ADHD care.

## **Conclusion**:

Preliminary findings suggest that this manualised ADHD group coaching program is effective across diverse age groups. Comparing adults and young adults provides insights into tailoring interventions for developmental needs. The program's low-tech, cost-effective design supports scalability in outpatient care settings. According to protocol at Trondheim Psykisk Helse og Rus, one person has been assisting the group leader for the young adults.


## **Do you have any conflicts of interest?**

No

The study was conducted by Marie Enback, affiliated with ADHD Norway, and funded by DAM.
The author declares no conflicts of interest. All rights reserved to Marie Enback.

**P-15-006**

**Videoconference-based cognitive behavioral therapy for Adults with ADHD: Secondary analysis of a randomized controlled trial | ID #125**

Abstract Submitter: Aiko Eto

Co-Authors: Ayumu Endo, Tokiko Yoshida, Yoichi Seki, Kayoko Taguchi, Minako Hongo, Kohei Takahashi, Yuki Shiko, Yoshiyuki Hirano, Eiji Shimizu

## **Object**:

The purpose of this study is to investigate the feasibility and clinical significance of videoconference-based cognitive behavioral therapy (vCBT) as an additional intervention for adults with ADHD. A prior randomized controlled trial (RCT) evaluated its efficacy in adult ADHD outpatients. This single-arm study focused on the RCT participants initially assigned to treatment-as-usual (TAU) who later opted to receive vCBT.

## **Method**:

In this single-arm study, 15 adults with ADHD who had been assigned to the TAU group in our previous RCT received 12 sessions of vCBT in addition to standard pharmacological treatment. The primary outcome was changes in ADHD symptoms, assessed using the ADHD Rating Scale-IV. Secondary outcomes included self-reported ADHD symptoms, depressive symptoms, anxiety symptoms, quality of life, functional impairment, and self-esteem scale scores.

## **Discussion**:

Data analysis is ongoing, and results will be presented at the conference. The RCT findings demonstrated significant improvements in ADHD symptoms, as measured by ADHD Rating Scale-IV total scores, which were assessed by blinded evaluators, compared to treatment-as-usual (TAU) (manuscript under review).

## **Conclusion**:

This study is expected to demonstrate that vCBT can serve as an effective complementary treatment for ADHD and improve treatment accessibility for patients facing barriers to in-person therapy.

## **Do you have any conflicts of interest?**

No

**P-15-007**

**Effects of acute physical exercise on response inhibition in adults with ADHD and the role of exercise intensity | ID #348**

Abstract Submitter: Hannah Strenger

Co-Authors: Alexandra Philipsen, Aylin Mehren

### **Object**:

Acute aerobic exercise has been shown to improve cognitive functions like response inhibition, which is often impaired in ADHD, suggesting potential benefits for managing ADHD symptoms. While most research has focused on children, studies in adults are limited, and the optimal training dose remains unclear. This study investigated the effects of a single bout of aerobic exercise at different intensities on response inhibition in adults with ADHD.

### **Method**:

This study was preregistered (osf.io/hkr8f). Forty adults with ADHD (nfemale=19) completed two 30-minute conditions on separate days: a cycling ergometer exercise at moderate (n=18) or high intensity (n=22), and an active control watching a documentary. The Stop-Signal Task was used before and after the intervention to assess changes in response inhibition. Effects of condition and intensity were analysed using a 2-way repeated measures ANOVA.

### **Discussion**:

Contrary to the predominantly positive findings in children, adults with ADHD did not benefit from exercise in terms of response inhibition in the present study. Additionally, there was no difference between moderate and high-intensity exercise. Investigating individual characteristics, such as symptom severity or fitness level, may help to understand whether and under what conditions exercise may be beneficial for response inhibition.

### **Conclusion**:

Preliminary analyses suggest no effect of exercise on response inhibition in adults with ADHD. The final sample (n=60) will be completed by the conference.

### **Do you have any conflicts of interest?**

No

**P-15-008**

**Preliminary findings from an ongoing open longitudinal trial of therapist-guided internet-delivered treatment for adults with ADHD | ID #442**

Abstract Submitter: Aleksander Heltne

Co-Authors: Tine Nordgreen, Robin Kenter, Robin Gulseth

## **Object**:

This study aims to investigate predictors of treatment outcomes in a therapist-guided internet-delivered treatment program for adults with attention deficit hyperactivity disorder (ADHD). Given the high prevalence of ADHD in adults and the challenges associated with treatment accessibility, internet-delivered psychological interventions may offer a scalable and effective alternative to traditional care.

## **Method**:

This is an ongoing open longitudinal cohort study conducted in routine care. Participants (N=400) undergo a structured therapist-guided internet-delivered intervention. Pre- and post-treatment measures assess ADHD symptoms and quality of life. Statistical analyses aim to identify baseline characteristics that predict treatment outcomes, including demographic factors, symptom severity, personality functioning, and engagement metrics.

## **Discussion**:

By the time of the conference preliminary findings from 200 participants who have completed the treatment program will be presented emphasizing overall treatment response and predictor analyses. While the six-month follow-up data will not be available for all participants at the time of the conference, initial pre-post comparisons provide insights into short-term treatment efficacy and predictors of treatment response.

## **Conclusion**:

These preliminary findings contribute to the growing evidence base for internet-delivered treatments for adults with ADHD. Identifying predictors of treatment success may inform future efforts to personalize interventions and improve outcomes. The results have implications for expanding access to evidence-based ADHD treatment in routine care settings. Further research is needed to evaluate long-term outcomes and implementation strategies.

## **Do you have any conflicts of interest?**

No

**P-15-009**

**Evaluation of an ADHD study skills group for university students with ADHD | ID #93**

Abstract Submitter: Katherine Johnson

Co-Authors: Antoinette Poulton, Renae Maxwell

**Object**:

Students with ADHD suffer poor academic achievement. Academic coaching involves learning about the common difficulties associated with ADHD in adulthood, learning how to optimise study plans, improve academic skills, develop time management and organisation skills, and enhance project management skills. An adaptation of Solanto's schedule was used in 2024 with University of Melbourne students and an evaluation is presented here.

**Method**:

Measures of ADHD symptoms, mental health, executive functioning, functional impairment, self-esteem, and university study skills were assessed in 69 individuals with ADHD, and 86 psychology student non-ADHD participants, prior to the group starting. At the end of the group session 11 individuals completed the executive function, functional impairment, self-esteem, and university study skills assessments. Feedback from students was collected.

**Discussion**:

Students with ADHD reported poorer mental health and lower self-esteem, rated their study skills very lowly, and reported greater problems with executive functioning and general functioning. Attendance dropped over the 12 week period. For those who completed the surveys after the 12-week period, there were significant improvements in particular aspects of executive functioning and in general functioning, and no changes in self-esteem.

**Conclusion**:

For those who completed the 12-week session, advantages were gained in time management, self-organisation and problem solving, symptom count, and general functioning. Qualitative analysis of the feedback suggests the ADHD Study Skills group was worthwhile.

**Do you have any conflicts of interest?**

No

**P-15-010**

**Parent training adapted for adults with ADHD: A randomized controlled trial of the Improving Parenting Skills Adult ADHD (IPSA) program | ID #266**

Abstract Submitter: Therese Lindström

Co-Authors: Sofia Buddgård, Lena Westholm, Martin Forster, Sven Bölte, Tatja Hirvikoski

**Object**:

Although many parents with ADHD report suboptimal outcomes following conventional parent training (PT), we know little about the potential of tailoring PT to address their ADHD-related needs. In a randomized controlled trial (RCT), we examined if participation in Improving Parenting Skills Adult ADHD (IPSA) is associated with improvements in parental self-efficacy (primary outcome), parental stress, home chaos, or externalizing child behaviors.

**Method**:

This ethically pre-approved trial was run in cooperation with an outpatient habilitation ADHD center. Participants were 109 self-referred adults with diagnosed ADHD, all having a child with or without ADHD aged 3-11 years. They were randomized to receive IPSA alongside their routine services (n=55) or to continuing their routine services only (n=54). Parent-reports were collected pre and post IPSA, and at a follow-up after up to three months.

**Discussion**:

Parents receiving IPSA reported greater increases in parental self-efficacy than parents in the comparison group both post IPSA ($d=0.85$, $p<.001$) and at follow-up ($d=0.84$, $p<.001$). We also saw a pattern of pre-to-post change in the expected direction across the secondary outcomes ($d=-0.39$ to $-0.71$), including reductions in child externalizing behaviors. Almost all parents who started IPSA (47 of 49) completed it without signs of unintended harm.

**Conclusion**:

To our knowledge, this is the first RCT to show that ADHD-adapted PT can effectively and safely help adults with ADHD to improve their parental self-efficacy. The long-term stability of IPSA's effect requires further evaluation, as does its feasibility and effectiveness in a regular health care or social services context. Pending this, IPSA seems promising; a fact likely due to the involvement of parents with ADHD throughout program development.

**Do you have any conflicts of interest?**

No

**P-15-011**

**Effects of a novel digital cognitive training on ADHD symptomatology, quality of life, everyday functionality, and divided attention in adults with ADHD: A randomized controlled trial | ID #177**

Abstract Submitter: Silke Lux

Co-Authors: Moritz Bergmann, Laura Zimmermann, Anke Fastenau, Julia Schörfel, Sara Parfel, Peter Sauermann, Jana Fecht, Jakob Futorjanski, Alexandra Philipsen

**Object**:

ADHD is characterized by inattention, hyperactivity, and impulsivity, often linked to cognitive deficits. Cognitive training has emerged as a potential non-pharmacological treatment, but evidence in adults remains limited. This study evaluated the  of a novel digital cognitive training application "NeuroNation MED" in improving ADHD symptomatology, quality of life, everyday functionality, and divided attention in adults with ADHD.

**Method**:

A single-blind randomized controlled trial on 75 adults with ADHD (German Clinical Trial Register, drks.de; DRKS00030767). Participants were assigned to an 12-week cognitive training program immediately after baseline, or a control group that started training after a 12-week waiting period. The training involved individualized, home-based sessions completed three times per week.

**Discussion**:

While no significant differences were observed between groups during the initial 12 weeks, the intervention group showed significant improvements in ADHD symptomatology (d=0.66), quality of life (d=0.32), and everyday functionality (d=0.59) post-training. Divided attention improved over time only in the intervention group (d=0.16). Effects were maintained at follow-up. Participants with baseline deficits benefited most from training.

**Conclusion**:

The ‘NeuroNation MED’ application demonstrated promising results in reducing ADHD symptomatology, improving quality of life, and everyday functionality in adults with ADHD, with sustained effects over time. These findings underline the potential of digital cognitive training as an adjunct therapy for ADHD in particular when cognitive deficits are present. Further research with optimized participant selection and engagement strategies is needed.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

• Fees (Scientific Consulting, Lectures, Advisory Board – in the last 5 years): Takeda Pharma • Financial grants (third-party funding) for research projects from the company Synaptikon. • Author and articles in Hogrefe, Kohlhammer, and other journals on p

**P-15-012**

**"A little bit of a life raft": Understanding ChatGPT adoption as a support tool by adults with ADHD | ID #463**

Abstract Submitter: Anika Pinto

Co-Authors: Emily Quilter, Jerusaa Vasikaran, Sarah Koerner, Tefkros Chimonas, Paul Marshall, Kenton O'Hara

**Object**:

This study explored how adults with Attention Deficit Hyperactivity Disorder (ADHD) adopt and use ChatGPT as a support tool for managing ADHD-related challenges in daily life. As generative AI technologies gain widespread adoption, including in the ADHD community, understanding these self-directed implementations provides crucial insights into user-driven support strategies and needs.

**Method**:

A qualitative study was conducted combining diary methodology and semi-structured interviews with 13 adults (8 female, 5 male) diagnosed with or self-identifying as having ADHD. Participants documented their ChatGPT usage over one week, followed by in-depth interviews exploring their experiences. Data was analysed using reflexive thematic analysis to identify and explore patterns of use.

**Discussion**:

Findings revealed three key domains where participants used ChatGPT: interpreting and crafting social communications to bridge perceived neurotypical-neurodivergent gaps, supporting executive function through task initiation and focus maintenance, and mediating emotional responses.

**Conclusion**:

ChatGPT emerged as a valuable support tool for adults with ADHD, enabling personalised coping strategies. Findings emphasise the importance of self-determination and community-based literacy in AI tool design. However, the use of AI raises critical ethical questions about agency, authenticity, and societal inclusion that must be carefully considered.

**Do you have any conflicts of interest?**

No

**P-15-013**

**Unlocking the potential of adults with ADHD by the means of a multi-disciplinarily hybrid course: Expanding knowledge, self-perception and self-compassion | ID #481**

Abstract Submitter: Johana Josset Ruiz Cardenas

Co-Authors: Daniela Diaz Jaimes, Paola Fernández Dorantes, Sofía Vera, Mónica Guizar, Johana Ruiz, Carla Aguilar, Karla Cota, Juan Carlos Portas, Marina Ruiz, Gabriela García

**Object**:

Asses the effects of an educational program for adults with attention-deficit hyperactivity disorder (ADHD) on participants problem knowledge, self-esteem, self-compassion and emotion regulation. Also, the training mentions stigma and misconceptions around adult ADHD and treatment, and it encourages understanding and coping of the disorder

**Method**:

Adults were referred to the 8 week program, meeting 2 hours a week, covering subjects like biology of ADHD, emotion regulation, performance, positive habits, communication and financial skills. Led by a multidisciplinary team. Lectures, group discussions and hands-on activities are used as part of the program. Assessments include pre- and post-study changes in ADHD cognition, emotion regulation, self-esteem, and self-compassion.

**Discussion**:

Program is intended to enhance participants' knowledge about ADHD and its relationship with adult life. Expected effects are enhancing self-awareness and empathy, understanding the condition and difficulties and benefits it brings and understanding pharmacological and non-pharmacological treatment options.

**Conclusion**:

By encouraging greater awareness and self-compassion and supporting this through the development of helpful skills, the program is set to address a serious need in education and treatment of adult ADHD. Its hybrid design and multidisciplinary team provide accessibility and set a precedent for creating an intervention for the management of ADHD

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

The course was organized by ConecT-DAH S.C., a multidisciplinary center specializing in ADHD. The program required a monetary investment from participants. The organizers declare no further conflicts of interest

**P-15-014**

**Effectiveness of a psychoeducation program in adults with ADHD | ID #289**

Abstract Submitter: María Elvira Ferrer Vázquez

Co-Authors: Ana Fátima Gómez Suárez, Claudia Balado Alves

## **Object**:

Multimodal or comprehensive treatment is the treatment of choice for ADHD, which includes psychoeducation (Kendall et al., 2010). From the INGADA Foundation we carry out therapeutic groups with adults with ADHD and we assessed the usefulness of these groups in 4 areas.

Objective: To know the self-perceived usefulness of the psychoeducational group intervention program with adult patients with ADHD.

## **Method**:

To analyze the scores of a self-elaborated questionnaire on the perception that adults with ADHD have of the areas of improvement after attending the psychoeducational intervention groups of the INGADA Foundation.

## **Discussion**:

It is stated that patients indicate a significant improvement in at least two areas after attending the groups for 6 months (areas: improvement of daily functionality, improvement in emotional management, understanding of the disorder and adherence to treatment and improvement in perceived quality of life).

## **Conclusion**:

We present the developed intervention program, which suggests an improvement in the self-rated perception of adults with ADHD in the areas of daily functioning, emotional regulation, adherence to treatment and quality of life.

## **Do you have any conflicts of interest?**

No

**P-16-001**

**Treffpunkt ADHS: A low-threshold therapeutic group project for adults with ADHD | ID #228**

Abstract Submitter: Barbara Troebinger

Co-Authors: Omid Amouzadeh-Ghadikolai, Bettina Vögl

## **Object**:

In 2024, a team of six mental health professionals launched the low-threshold outpatient group project "Treffpunkt ADHS", specifically designed for adults with ADHD in Graz, Austria.

This poster presents the conceptual framework and implementation of the project's pilot phase. Demographic characteristics and treatment variables of the target group are discussed, as well as key adaptations planned for the second project phase in 2025.

## **Method**:

Six group sessions were offered over a six month period. Two mental health professionals led each group session, which was divided in three parts: an introduction, exchange in smaller groups and a final discussion in the entire group.

Participants were mainly female, with ages ranging from 22 to 75 years. The number of non-urban participants increased over time. The majority was currently attending some form of mental health treatment.

## **Discussion**:

In the era of individualization and digitalization, the need for group-based therapeutic approaches in mental health care is increasing. Adults with ADHD often face challenges in forming and maintaining relationships, alongside heightened rates of social anxiety and behavioral problems. These factors underscore the importance of group settings as a therapeutic tool for that population.

## **Conclusion**:

First experiences from this outpatient group project showed a huge interest of adults with ADHD of all ages to attend specialized therapy and support groups in the urban area.

## **Do you have any conflicts of interest?**

No

**P-16-002**

**Health economic evaluation of the time management group intervention "Let's Get Organized" | ID #119**

Abstract Submitter: Maria Wingren

Co-Authors: Elin Vimefall, Marie Holmefur, Kajsa Lidström-Holmqvist

### **Object**:

Planning, organizing, and time management are essential life skills. People with impaired executive functioning, such as those with ADHD, often struggle in these areas, facing lifelong challenges. This study aimed to evaluate whether the group intervention "Let's Get Organized" (LGO) is a cost-effective way to improve time management and quality of life for people with ADHD, autism, or mental disorders, compared to individual occupational therapy

### **Method**:

This study was part of a larger randomized control trial that compared LGO with individual occupational therapy. The participants (n=74) all had reported problems with time management. The effect was estimated both for Quality Adjusted Life Years (QALY), using the EQ-5D-5L questionnaire and for time management skills. The cost was calculated from a societal perspective. The study followed the Consolidated Health Economic Evaluation Standards.

### **Discussion**:

While both interventions had a positive effect the results showed that there is no difference between the intervention and control groups. Therefore, a cost-Minimization Analysis (CMA) was performed to determine which intervention is the most cost effective. The data analysis is in progress. Final results will be presented at the conference.

### **Conclusion**:

Cost-effective interventions that result in sustainable impact are highly important. Final conclusions will be presented at the conference.

### **Do you have any conflicts of interest?**

No

**P-16-003**

**Can time management interventions improve parental self-efficacy? | ID #80**

Abstract Submitter: Maria Wingren

Co-Authors: Kajsa Lidström-Holmqvist, Gunnel Janeslätt, Marie Holmefur

**Object**:

Being a parent demands considerable attention, planning, and problem solving, including time management, and can be a particular challenge for parents with impaired executive functioning e.g due to ADHD. The overall aim of this trial was to evaluate occupational therapy time management interventions for parents with impaired time management skills due to ADHD, autism, or mental disorders.

**Method**:

Part of a RCT study comparing time management interventions: Let's Get Organized with individual occupational therapy. Participants (n=28) were recruited from outpatient clinics, had difficulties in time management due to ADHD, autism or mental disorders and had children. Data collected with Parenting Sense of Competence Scale, General Self-Efficacy Scale, and Assessment of Time Management Skills instrument, analyzed with non-parametric methods.

**Discussion**:

Our results indicated a significant improvement in parental self-efficacy (total score, $p = 0.032$) and the parenting efficacy subscale ($p = 0.030$) after time management interventions. Parenting satisfaction displayed an improving trend ($p = 0.121$), and parenting interest remained stable ($p= 0.797$) throughout the study. General self-efficacy and Time management skills improved significantly ($p = 0.014$, $p = 0.003$) after interventions.

**Conclusion**:

Time management interventions improved the parental self-efficacy and general self-efficacy and can provide support in parenting for parents with ADHD, autism, or mental disorders. Time management interventions should be offered to parents with ADHD, autism or mental disorders who express difficulties in the area of time management and practical or preferential aspects can guide the choice of individual or Let's Get Organized group intervention.

**Do you have any conflicts of interest?**

No

**P-16-004**

**Cardiovascular effects of non-pharmacological interventions in people with ADHD: A systematic review with meta-analysis of randomized controlled trials | ID #480**

Abstract Submitter: Tao Coll-Martín

Co-Authors: Amparo Díaz-Román, Iman Idrees, Samuele Cortese, Samuel Westwood, Alessio Bellato

## **Object**:

Unlike medication, non-pharmacological interventions for ADHD generally do not produce statistically significant increases in heart rate (HR) or blood pressure (BP). However, it is unclear whether these null results are due to a lack of power in primary studies or to the genuine absence of meaningful effects. We present a systematic review with meta-analysis on the cardiovascular effects of non-pharmacological interventions in people with ADHD.

## **Method**:

We searched multiple databases, registered, and other sources for any non-pharmacological randomized controlled trial (RCT) with HR or BP (systolic or diastolic) outcomes in individuals with ADHD. For each included study, we assessed the statistical power to detect the smallest meaningful effect (set as d = 0.15). We used multivariate meta-analytic models, excluding outliers, to deal with studies involving multiple interventions and outcomes.

## **Discussion**:

We identified 17 RCTs (1,533 participants), each of which was severely underpowered for the smallest meaningful effect. Our meta-analyses revealed an absence of meaningful effects on HR ($\bar{g}$ = 0.02, 95% CI [–0.09, 0.13]) and BP—systolic ($\bar{g}$ = –0.01, 95% CI [–0.13, 0.11]) and diastolic ($\bar{g}$ = –0.08, 95% CI [–0.19, 0.03]). Despite the variety of interventions (e.g., psychotherapy, supplements, exercise, neurotherapy), heterogeneity was virtually zero.

## **Conclusion**:

Our findings support no meaningful effects of non-pharmacological interventions for ADHD on cardiovascular parameters of HR and BP. This reinforces the favorable safety profile of these types of treatment as an alternative to pharmacological interventions. However, it could also explain the limited effect of non-pharmacological interventions on core ADHD symptoms.

## **Do you have any conflicts of interest?**

No

**P-16-005**

**Protocol for a pilot study on dual-target theta burst transcranial magnetic stimulation of the fronto-parietal circuit for executive function in adolescent ADHD | ID #265**

Abstract Submitter: Huiru Cui


## **Object**:

Executive function impairment is a central feature of ADHD. Repetitive transcranial magnetic stimulation (rTMS) is a non-invasive technique that stimulates superficial brain nerve cells, offering alternative treatments for ADHD. Given the under-activation of the fronto-parietal circuit observed in adolescent ADHD through fMRI studies, dual-target TMS stimulation of this circuit presents a promising therapeutic option.

## **Method**:

This study will recruit 30 adolescent ADHD patients, randomly assigned to either the active or a sham control group. Intermittent theta burst stimulation (iTBS) will target the left inferior parietal lobule followed by the right inferior frontal gyrus over 10 sessions in one week. Assessments will include fMRI, cortical inhibition measures, executive function evaluations, and clinical symptom evaluations pre- and post-TMS treatment.

## **Discussion**:

Executive function assessments will involve 1) N-back and Spatial Span tasks for working memory, 2) Go/No-Go tasks for response inhibition, 3) Flanker tasks for executive control, 4) NAB mazes for general executive functioning, and 5) BVMT-R for visual learning and memory. Clinical symptom assessments will comprise the Conners' Parent Rating Scale and the Behavior Rating Inventory of Executive Function (BRIEF), completed by parents.

## **Conclusion**:

Primary outcomes will examine differences in cognitive functioning measures before and after the intervention, while secondary outcomes will assess changes in clinical measures and neurobiological indicators. We will investigate the efficacy of this neuromodulation protocol on executive function in ADHD. This study will be the first to provide evidence for treating ADHD using a dual-target TBS protocol aimed at the frontoparietal circuit.


## **Do you have any conflicts of interest?**

No

**P-16-006**

**Association between physical activity and attention inhibition in children with ADHD: Data from the abcd study | ID #155**

Abstract Submitter: Lauren Dacorro-Poole

Co-Authors: Jennifer Bruno, Elveda Gozdas, S.M. Hadi Hosseini, Shu-Shih Hsieh

## **Object**:

Research suggests that physical activity alleviates symptoms and enhances cognition in children with ADHD, but its link to attention inhibition, a cognitive process underlying ADHD behavior, remains underexplored. This study investigated the association between weekly physical activity and attention inhibition, hypothesizing that higher physical activity levels would correlate with better attention inhibition in children with ADHD.

## **Method**:

Using Adolescent Brain Cognitive Development data, we ran hierarchical regressions to examine the link between weekly physical activity (parent-reported Sports Activities Involvement Questionnaire) and attention inhibition (Flanker task on iPad). Participants (mean age = 9.9 ± 0.6 years) included 320 children with ADHD and 3,796 neurotypical peers. Flanker performance was indexed by age-adjusted normative scores, computed scores, and T-scores.

## **Discussion**:

Hierarchical regressions showed that higher weekly physical activity was linked to higher age-corrected scores ($\beta = 0.10$, $p < .001$), computed scores ($\beta = 0.11$, $p < .001$), and T-scores ($\beta = 0.04$, $p = .025$) on the Flanker task after controlling for age, sex, income, and ADHD diagnosis. This indicates better attention inhibition increases with physical activity in both children with ADHD and neurotypical peers.

## **Conclusion**:

Using a large-sample data, findings from this study substantiate the significance of regular physical activity participation to facilitate attention inhibition in children with ADHD.

## **Do you have any conflicts of interest?**

No

**P-16-007**

**Adapting metacognitive strategy training for adolescents with ADHD | ID #61**

Abstract Submitter: Agnete Dyresen

Co-Authors: Ingvild Haugen, Anne Myge Gulsrud, Krister W. Fjermestad, Jan Stubberud, Merete Glenne Øie

## **Object**:

Executive function difficulties are common in youth with Attention-Deficit/Hyperactivity Disorder (ADHD). These difficulties can affect the ability to plan ahead, self-regulate, and apply flexible problem-solving strategies. Goal Management Training (GMT) is a metacognitive strategy training designed to enhance executive functioning. While GMT has demonstrated efficacy in adults with ADHD, adapting it for youth may necessitate modifications.

## **Method**:

This ongoing multi-center RCT investigates the efficacy of an adapted GMT protocol compared to treatment as usual (TAU) in adolescents with ADHD. To date, 104 participants aged 12–18 years have been included, with a target sample size of 120 (GMT: n=60; TAU: n=60). The GMT intervention consists of seven weekly sessions designed to enhance top-down attentional control and executive functioning using metacognitive strategies.

## **Discussion**:

To adapt GMT for adolescents, parent and teacher training components are integrated to facilitate transfer from training to real life and provide support for participants. Daily text-message prompts are used to cue goal management in their daily living. Finally, the GMT materials have been adjusted for this age group by incorporating examples relevant to adolescents, improved illustrations, and simplified language.

## **Conclusion**:

While effectiveness outcomes are pending, preliminary observations suggest that tailored GMT adaptations support feasibility and engagement in adolescents with ADHD. Our study highlights the potential for metacognitive training to address critical gaps in the current treatment plans for adolescents with ADHD. The implications for therapeutic settings will be discussed, along with recommendations for future research and the scalability of GMT.

## **Do you have any conflicts of interest?**

No

**P-16-008**

**Adolescents with ADHD and their caregivers find goal management training as credible as standard treatment | ID #105**

Abstract Submitter: Ingvild Haugen

Co-Authors: Anne Myge Gulsrud, Agnete Dyresen, Jan Stubberud, Krister W. Fjermestad, Merete Glenne Øie

## **Object**:

The present study examines the perceived credibility of Goal Management Training (GMT) for adolescents with Attention Deficit Hyperactivity disorder (ADHD). GMT is a metacognitive strategy training specifically developed to address everyday difficulties with executive functioning such as problems with planning, initiating, remembering, staying focused on, and completing tasks – core challenges in ADHD.

## **Method**:

In an ongoing randomized, controlled trial (RCT) of GMT compared to treatment-as-usual (TAU), adolescents with ADHD (n = 78, age 12-18) and their caregivers (n = 106) judged the the perceived logic of their assigned treatment, its potential to address ADHD-related issues, its effectiveness for problems beyond attentional difficulties, and their likelihood of recommending it to others, on a Likert scale ranging from 0 to 8.

## **Discussion**:

Mean credibility of GMT was compared to mean credibility of TAU using one-way analysis of variance (ANOVA). Overall, adolescents found GMT (M = 5.04, SD = 1.22) as credible a treatment for ADHD as TAU (M = 5.08, SD = 1.43), $F(1,77) = 0.03$, $p = .875$, $\eta 2 = .00$. Caregivers also found GMT (M = 5.69, SD = 1.18) to be equally credible compared to TAU (M = 5.29, SD = 1.54), $F(1,104) = 2.35$, $p = .128$, $\eta 2 = .02$.

## **Conclusion**:

Developing effective non-pharmacological interventions for ADHD requires evaluating their acceptability and feasibility. Preliminary data from an ongoing RCT show that families find executive control training for adolescents with ADHD as credible as existing treatment. Should the ongoing RCT demonstrate effects of GMT, the findings would support the integration of GMT into mental health services.

## **Do you have any conflicts of interest?**

No

**P-16-009**

**Assessing reward and punishment sensitivity among children with ADHD and comorbid disruptive behavior disorders prior to and during a multimodal intervention | ID #35**

Abstract Submitter: Melissa Hernandez

Co-Authors: Madeline Curzon, Eva Goldhagen, Leanett Reinoso, Margaret Johansson, Paulo Graziano

**Object**:

To examine differences in children with attention-deficit/hyperactivity disorder (ADHD) and comorbid disruptive behavior disorders' (DBD) reward sensitivity (RS) and punishment sensitivity (PS) prior to and during intervention, as well as their change over the course of a summer treatment.

**Method**:

Participants included 132 children (74% males; Mage = 5.52 yrs; 86% Latino) with ADHD who completed a 7–8-week intervention. Prior to treatment, parents completed the Sensitivity to Punishment and Sensitivity to Rewards Questionnaire for Children. During the intervention, parents rated on a 5-point scale on a Daily Report Card how much their child liked a reward (RS) when they received a "green day," and disliked punishment (PS) on "red days."

**Discussion**:

Paired sample t-tests showed that reward sensitivity (RS) was significantly higher than punishment sensitivity (PS), prior to (Cohen's $d = 0.65$, $p < .001$) and during the intervention ($d = 1.44$, $p < .001$). Repeated measures analysis of RS revealed no significant change over time. Due to the success of the intervention and significant decrease of "red days" across time ($Z = -4.30$, $p < .001$) change in PS during the intervention could not be analyzed.

**Conclusion**:

In our sample, children with ADHD and comorbid DBDs exhibited higher RS than PS, with no change in RS over time. This suggests that children with ADHD may not habituate to rewards, and instead maintain motivation despite repeated exposure. These results indicate that consistent reward-based strategies could be beneficial in behavioral interventions for children with ADHD and comorbid DBDs.

**Do you have any conflicts of interest?**

No

**P-16-010**

**Co-development of exergaming intervention with children with ADHD and parents: A mixed-method study | ID #115**

Abstract Submitter: Shu-Shih Hsieh

Co-Authors: Lauren Dacorro-Poole, Qanita Fatima, Yu Tian, Sachin Shah, Hamilton Morrin, Atheeshaan Arumuham, Sebastian Ludyga, Edmund Sonuga-Barke

### **Object**:

The objectives of this study were two-fold: 1) to co-select exergaming activities for children with ADHD in collaboration with children and their parents and 2) to seek perceptions of exergaming from children with ADHD and their parents. This mixed-method study will inform the development of an intervention prototype for follow-up home-based feasibility study with children with ADHD and their parents.

### **Method**:

24 children with ADHD played 13 exercise-focused videogames from Nintendo with their parents present. During each game, children's heart rates (HR) were recorded. Children also rated perceived cognitive challenges and likings of each game using visual analogue scales (from 1 to 10). Afterwards, children and parents participated in a semi-structured interview to share their perceptions of the games. Data were reported using descriptive approach.

### **Discussion**:

Of the 13 games, seven were rated highly on the liking scale (7.7 ± 0.6) and perceived as cognitively challenging (7.2 ± 0.5) by children. These seven games induced a moderate intensity of exercise (HR during games 127.8 ± 6.2 beats per minute). In interviews, both children and parents perceived the games as fun, diverse, and accessible. Most parents (92%) liked the idea of using exergaming to improve cognition and fitness in children with ADHD.

### **Conclusion**:

Our data highlight that exergaming can provide physical and cognitive stimulation for children with ADHD. Parents and children viewed exergaming as a feasible and motivational intervention strategy. We will develop an intervention prototype based on data from this study.

### **Do you have any conflicts of interest?**

No

**P-16-011**

**Development of a psychoeducational program for children with ADHD in Norway | ID #278**

Abstract Submitter: Bente Knutsen

Co-Authors: Torunn Stene Nøvik

**Object**:

Psychoeducation is considered an important part of the treatment plan for individuals with ADHD. Psychoeducational programs have been developed for adults and adolescents and for parents of children with ADHD. However, programs for children have been lacking. We therefore aimed to develop a training program for children and young people with ADHD, which could be used in clinical settings.

**Method**:

The program includes a flipchart book with illustrations and text, activity sheets, and brochures. Main characters, Tingle, Quick and Chaos, represent hyperactivity, impulsivity and attention problems. Five therapists in a child and adolescent psychiatric (CAP) outpatient unit implemented the program with a group of 13 children with ADHD in 2021. Children, parents and therapists completed a questionnaire about their experiences with the program.

**Discussion**:

Most children reported that participating in the training was enjoyable and that they appreciated the accompanying illustrations, tasks, and activity sheets. All participants reported that they had improved their knowledge about ADHD after the training. Parents found the program highly beneficial. In addition, therapists expressed satisfaction with the program, describing it as user-friendly and relatively easy to adapt to individual needs.

**Conclusion**:

We developed a psychoeducational program for children and adolescents with ADHD and performed preliminary testing of the program in a CAP outpatient setting. Children, parents, and therapists were generally satisfied with the program. The program has recently become available for professionals working with children with ADHD in Norway. Further studies to assess the program's clinical utility are warranted.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I receive 1/3 of the total royality on the sale of the program through the publisher Hertervig Forlag. St.Olav University Hospital receives 2/3 of the total roality. In collaboration with Regional Centre for Child and Youth Mental Health and Child Welfare

**P-16-012**

**RECOGNeyes gaze-control training for ADHD: A confidence-in-concept study | ID #243**

Abstract Submitter: Elizabeth Liddle

Co-Authors: Alice Waitt, Jyothika Kumar, Lauren Gascoyne, Bryony Waters-Harvey, Abdulrhman Shalabi, Jacob Habgood, Peter Collins, Maddie Groom, Peter Liddle

**Object**:

RECOGNeyes is a computer game designed to train better inhibitory gaze-control, often impaired in ADHD, by exercising the brain's oculomotor network. Moreover, this network forms the backbone of selective attention, inhibition and working memory networks. We used magnetoencephalography (MEG) and fMRI to investigate the effects of RECOGNeyes training on oculomotor control and its neural correlates in an inattentive sample of young adults.

**Method**:

35 participants with ADHD, dyslexia or a related condition, were randomised to 2, 3, or 4 training sessions/week, at home, for 2 weeks. Outcomes were: oculomotor efficiency during reading; performance on an antisaccade task, performed during MEG acquisition; α-band amplitudes in frontal eyefields (FEF), and β-band amplitudes in dorsolateral pre-frontal cortex (DLPFC). Resting-state oculomotor network connectivity was measured using fMRI.

**Discussion**:

Task performance and reading eye-movements improved after training. RECOGNeyes training duration correlated with improvements in task performance, shorter reading fixations, and with reductions in FEF α and DLPFC β that were correlated with reductions in antisaccade reaction time cost. Greater training time was also associated with reduced inter-hemispheric resting-state connectivity, and increased left intra-hemispheric connectivity.

**Conclusion**:

RECOGNeyes gaze-control training improves oculomotor control, with possible transfer to reading efficiency, and alters electrophysiological correlates of anticipatory attention. fMRI findings suggests suggest plastic changes within the oculomotor network in the direction of increased hemispheric independence. Next steps will be to establish whether RECOGNeyes gaze-control training can produce real-world benefits for children with ADHD.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I have a revenue-sharing agreement with the University of Nottingham regarding inventors' share of any revenue accruing to the University arising from future commercialisation of the RECOGNeyes.

**P-16-013**

**Designing preschool attention and sleep support (PASS): Stakeholder input on a parenting intervention for preschoolers at-risk for ADHD | ID #124**

Abstract Submitter: Jessica Lunsford-Avery

Co-Authors: Matthew Gibson, John Mitchell, Brian Eichner, Naomi Davis

**Object**:

Behavioral Parenting Training (BPT) does not consistently improve ADHD symptoms in preschoolers. Preventative therapies targeting underlying biological mechanisms, such as sleep regulation, may improve early ADHD trajectories. This qualitative study with key stakeholders aims to inform development of Preschool Attention and Sleep Support (PASS), an 8-week therapy combining BPT and behavioral sleep medicine (BSM) for preschoolers at-risk for ADHD.

**Method**:

Three stakeholder groups each participated in 2 rounds of semi-structured focus groups: caregivers of preschoolers at-risk for ADHD (n=8), pediatricians (n=9), and child psychology providers (n=6). Participants reviewed PASS materials, and across rounds, provided iterative feedback on its helpfulness, appeal, and accessibility, and recommended changes. All transcripts were coded and thematically analyzed using inductive and deductive approaches.

**Discussion**:

Dominant themes across stakeholders concerned treatment content, structure, process, materials, and individualization. Stakeholders emphasized needs for: specific, practical, and developmentally-appropriate strategies; appropriate session pacing and time for trouble-shooting skill use; validation of parents' experiences; easy-to-use handouts and digital materials; and tailoring the therapy to family structure, culture, and household environment.

**Conclusion**:

Stakeholder input is essential for developing acceptable, feasible, and effective preschool ADHD interventions for use in real-world settings. Future research will describe the acceptability and feasibility of the stakeholder-informed PASS intervention, its effectiveness in improving ADHD symptoms, and whether such improvements are mediated by enhanced sleep among preschoolers at risk for ADHD.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

The presented work was funded by the National Institute of Mental Health (U.S.A.). I have received additional research support from: Lumos Labs, Supernus

**P-17-003**

**Factors predicting the persistence of ADHD symptoms in preschoolers after behavioural therapy in an Asian population | ID #95**

Abstract Submitter: Rashmi Mittal

Co-Authors: Yan Zhen Heng, Cynthia Quek, Chitra Ramalingam, Phey Hong Yang, Pratibha Agarwal, Lourdes Mary Daniel, Sandra Mascarenhas

**Object**:

The rate of stability of preschool Attention-Deficit Hyperactivity Disorder (ADHD) diagnosis varies across studies. We aimed to identify the incidence and factors that predict persistence of ADHD symptoms in a retrospective cohort of 86 preschoolers (4-6y) in a multi-racial Asian population, presenting with behavioral and/or developmental concerns.

**Method**:

A comprehensive assessment, including parent- and teacher-reported Strengths and Difficulties Questionnaire (SDQ), and Behavioral Rating Inventory of Executive Function–Preschool (BRIEF-P) was conducted. Primary outcome was proportion of children who had persistent ADHD symptoms at 1 year follow-up after behavioral therapy. Logistic regression analyses were conducted, and results are presented as Odds Ratio (OR) with [95% Confidence Interval].

**Discussion**:

Although 69% children improved with behavioral therapy, persistence of ADHD symptoms was observed in 67%. This was significantly predicted by child's age at presentation (OR = 0.84, [0.70, 1.00], p=0.05), behavioral concerns reported by both parent and teacher (OR = 14.1 [2.6, 70], p=0.002), parent-reported BRIEF-P Inhibit T-scores (OR = 1.08, [1.01, 1.14], p=0.02) and teacher-reported SDQ Hyperactivity scores (OR = 1.71, [1.06, 2.77], p=0.03).

**Conclusion**:

Although majority of the children demonstrated improvement with behavioral therapy, persistence of ADHD symptoms is observed in 67% of the children post-intervention. A comprehensive evaluation including parent and teacher reports, and behavioral and executive function screeners might help in identifying preschoolers at higher risk of persistent ADHD symptoms.

**Do you have any conflicts of interest?**

No

**P-17-004**

**A combinatorial intervention protocol for adolescent students with ADHD: Preliminary report of effectiveness | ID #235**

Abstract Submitter: Liza Pavlou Papagianni

Co-Authors: Elena Theodorou

**Object**:

The development of an intervention protocol for adolescent students with Attention Deficit Hyperactivity Disorder. The protocol introduces a combination of cognitive training, counselling of academic skills and parents' psychoeducation. Hypothesis: A brief combinatorial intervention will have positive effects on Executive Functions - namely Working Memory, Inhibitory Control and Mental Flexibility for adolescent students with ADHD.

**Method**:

Fifty-four adolescent students (13-18yrs) with ADHD diagnosis participated. The cognitive training was computer-based using a digital platform offering cognitive training games aiming to improve functions such as memory, attention, problem-solving skills etc. The duration of the intervention was set for one month.

**Discussion**:

We used Wilcoxon signed-rank to assess possible differences in cognitive skills before and after the intervention. Statistically significant changes were found for Working Memory, Cognitive Flexibility, Inhibitory Control and Short-Term Memory while near-significan positive changes were found for Planning and Focused Attention

**Conclusion**:

The tested hypothesis proved correct. results indicate that brief intensive intervention combining cognitive training, academic skills counseling and parents' psychoeducation yields positive effects on Executive Functions for adolescents with ADHD. These prositive effects may lead to improved daily functioning for adolescent students with challenges in Executive Functions

**Do you have any conflicts of interest?**

No

**P-17-005**

**The effect and mechanism of emotion regulation intervention on children with ADHD | ID #209**

Abstract Submitter: Kaiqi Peng

Co-Authors: Jinlan Liu, Weizhen Yin, Danping Hong, Meng Yu

**Object**:

Emotion dysregulation is a prominent symptom among children with ADHD, which closely correlates with the severity of ADHD symptoms. Based on the model of emotion dysregulation, a clinical randomized controlled study was conducted to develop an Emotion Regulation Intervention (ERI) addressing emotion dysregulation among children with ADHD while investigating its mechanism of intervention effects.

**Method**:

A total of 37 children with ADHD aged 6-9 years were recruited and randomly allocated to either the intervention group or the active control group. The ERI was delivered twice a week for a total of 8 sessions, with follow-up measurements conducted after each session. The effects of the ERI were evaluated by assessing ADHD symptoms, emotion recognition, emotional reactivity and lability, emotion regulation capabilities, empathy, and social skills.

**Discussion**:

Results demonstrated that the ERI effectively alleviated ADHD symptoms and concurrently improved emotional lability, emotional reactivity, and the emotion regulation capabilities in children with ADHD. Hierarchical regression analysis demonstrated that enhancements in emotion regulation ($\beta = 0.47$, $p = 0.017$), and particularly emotional lability ($\beta = 0.89$, $p < 0.001$) significantly contributed to the reduction of ADHD symptoms.

**Conclusion**:

The ERI specifically designed for addressing emotion dysregulation demonstrated its effectiveness among children with ADHD. The findings indicated that improvements in emotional stability (decreased emotional lability) had the most significant impact on alleviating ADHD symptoms, thereby providing preliminary insights into the mechanism underlying the intervention's efficacy.

**Do you have any conflicts of interest?**

No

**P-17-006**

**ADHDnet: Development of an internet-delivered intervention for parents of preschool children with ADHD | ID #310**

Abstract Submitter: Costina-Ruxandra Poetar

Co-Authors: Anca Dobrean, Roxana Sipos, Elena Predescu

## **Object**:

Attention/deficit-hyperactivity disorder (ADHD) is one of the most common mental health problems in children. Internet-delivered interventions could improve treatment access; however, research is scarce regarding their efficacy for ADHD. The aim of the present study was to investigate the development of ADHDnet, an Internet-delivered intervention for parents of preschool children with ADHD.

## **Method**:

The Internet-delivered intervention (ADHDnet) is based on an existing behavioral parent training protocol tested with a Romanian sample. Nine modules were delivered over four weeks with a clinician guiding each parent on the platform.

## **Discussion**:

The development of ADHDnet responds to the growing need for accessible, evidence-based interventions for parents of preschool children with ADHD. Early behavioral interventions can significantly improve child outcomes and reduce parenting stress, yet traditional in-person services often present barriers due to geographical, time, and financial constraints.

## **Conclusion**:

ADHDnet represents a promising step toward scalable, Internet-delivered interventions for parents of preschool children with ADHD. Given the high potential of Internet-delivered interventions in the treatment of child mental health problems, it is important to investigate their efficacy conducting rigorous research.

## **Do you have any conflicts of interest?**

No

**P-17-007**

**Co-development of multi-component physical activity intervention with children with ADHD and parents | ID #420**

Abstract Submitter: Yu Tian

Co-Authors: Dianne Francisco, Lauren Dacorro, Liam Shiels, Qanita Fatima, Ricardo Martins, Shu-Shih Hsieh

## **Object**:

The objectives of this study are two-fold: 1) to co-develop a multi-component physical activity (MPA) intervention targeting cognition, multi-tasking, and fitness with children with ADHD and their parents; 2) to explore the perceptions of MPA from both children with ADHD and their parents. This study will provide empirical foundation for development of a MPA intervention programme for children with ADHD.

## **Method**:

Fourteen children with ADHD and aged 6-12 participated in a MPA session with their parents present. The MPA session which included 10 different activities, was assessed for exercise intensity using heart rate (HR) monitors. Children also rated perceived cognitive challenges and likings of each activity using visual analogue scale (0-10). Afterwards, they participated in a semi-structured interview to provide their feedback on the MPA session.

## **Discussion**:

Of the 10 activities, five were rated highly on the liking scale (7.6 ± 0.6) and perceived as cognitive-challenging (7.2 ± 0.5) by children. These activities induced moderate exercise intensity (mean HR: 134 ± 19 bpm). In the interviews, parents and children perceived the activities fun, diverse, and accessible. Thirteen out of 14 parents supported using MPA to enhance cognition and fitness in children with ADHD.

## **Conclusion**:

Our data show that the MPA session can provide sufficient physiological and cognitive stimulations to children with ADHD. Parents and children found the MPA enjoyable and accessible, supporting its potential to improve cognition and fitness in children with ADHD. Children with ADHD prefer structured, interactive, and challenging activities. These findings will guide the development of follow-up long-term MPA intervention programme.

## **Do you have any conflicts of interest?**

No

**P-17-008**

**The effectiveness of personalized upper-alpha neurofeedback treatment for children with ADHD: Preliminary results of a triple-blind randomized controlled trial | ID #128**

Abstract Submitter: Yuliang Wang

Co-Authors: Winnie W.Y. Tso, Tatia M.C. Lee

### **Object**:

This study evaluated the effectiveness of personalized upper-alpha neurofeedback (NFB) in children with Attention Deficit Hyperactivity Disorder (ADHD) in a triple-blind, randomized controlled trial (RCT). Parent-rated ADHD symptoms and neuropsychological profiles were assessed to determine treatment effects.

### **Method**:

Thirty-six children with ADHD (mean age = 8.42, SD = 3.35) were randomly assigned to either the NFB (n = 19) or sham NFB (n = 17) group. The NFB group received individualized EEG frequency training based on their resting-state EEG profiles recorded before each session, while the sham treatment used a prerecorded EEG. All participants, parents, and site staff were blinded to group assignments. Linear mixed models assessed treatment effectiveness.

### **Discussion**:

This personalized upper-alpha NFB was not superior to sham NFB in reducing ADHD symptoms ($p = 0.354$), though both treatments significantly reduced parent-rated symptoms (post- vs. pre-training). Personalized NFB significantly improved processing speed ($p = 0.047$), but this improvement was not significantly greater than that in the sham group ($p = 0.108$). No significant effects were observed on working memory in either group.

### **Conclusion**:

This is the first triple-blind RCT to assess personalized upper-alpha NFB in children with ADHD. Results do not support its specific effectiveness in reducing core ADHD symptoms. Nevertheless, consistent with findings in healthy adults, some improvements in processing speed were observed. Further research is needed to explore the potential of personalized NFB for ADHD treatment in children.

### **Do you have any conflicts of interest?**

No

**P-17-009**

**Efficacy of oriented parental occupational executive training (poet) approach in children with ADHD | ID #449**

Abstract Submitter: Maya Weissenberg Barak

Co-Authors: Martin Efron

## **Object**:

POET approach which is based on functional parent training, and aims to improve executive functions. this method has been proven effective under individual parent guidance. The objective of the present study was to assess the efficacy of the POET group therapy.

The intervention includes eight sessions adjusted to the needs of

## **Method**:

The study was conducted in SHeba ADHD clinican with children aged 8 - 14 years with ADHD were treated in groups of 4 - 5 parents.

In order to assess the treatment efficacy, the EFFORT routines scale and BRIEF questionnaires were used to measure the child's daily living and executive functioning. Additionally, parents were given a questionnaire to evaluate about knowledge and

and tools received for coping with the child's daily difficulties.

## **Discussion**:

25 children were participated. A comparison of the post- versus pre-group questionnaire results shows a significant improvement in the following parameters :

1. The Efforts routines scale: morning and evening routines, play and leisure routines, and social routine.

2. parental knowledge and tools received for coping with the child's daily difficulties.

## **Conclusion**:

Preliminary results indicate that the POET group improves executive functions and daily living skills in children with ADHD. It also improves knowledge and skills among parents. It seems worthy to pursue the investigation of the long-term effects of the treatment.

## **Do you have any conflicts of interest?**

No

**P-17-010**

**Neurofeedback for ADHD: A Meta-analysis of randomized controlled trials 'blinded' and neuropsychological | ID #344**

Abstract Submitter: Samuel Westwood


## **Object**:

To conduct a meta-analysis of randomized controls trials (RCTs) employing probably blinded (i.e., rated by individuals probably or certainly unaware of treatment allocation) or neuropsychological outcomes to test the efficacy of neurofeedback (NF) as a treatment for ADHD in terms of core symptom reduction and improved neuropsychological outcomes.

## **Method**:

PubMed (MEDLINE), OVID (PsycInfo, Medline, Embase+Embase Classic), and Web of Science (as well as references) were searched until 25/7/2023, with no language limits. We included parallel-arm RCTs investigating NF in participants of any age with a clinical ADHD/hyperkinetic syndrome diagnosis. Standardized mean differences (SMDs) with Hedges' g correction were pooled in random effects meta-analyses for all eligible outcomes.

## **Discussion**:

We included 38 RCTs (N=2,472, 5-40-years). Probably blinded reports of ADHD total symptoms showed no significant improvement with NF (SMD=0.04, 95%CI[-0.10,0.18]). A small significant improvement was found when analysing RCTs with standard protocols (SMD=0.21, 95%CI[0.02,0.40]). Results were similar when excluding adults or using cortical learning/self-regulation. A small improvement in processing speed was observed (SMD=0.35, 95%CI[0.01,0.69]).

## **Conclusion**:

Overall, NF did not appear to meaningfully benefit individuals with ADHD, clinically or neuropsychologically at the group-level. Future studies seeking to identify individuals with ADHD who may benefit from NF could focus on using standard NF protocols, measuring processing speed, and leveraging advances in precision medicine, including neuroimaging technology


## **Do you have any conflicts of interest?**

No

**P-17-011**

**Efficacy of a mobile health with tailored personalized exercise rehabilitation program for children with ADHD: Randomized controlled trial | ID #454**

Abstract Submitter: Ren Yuanchun

Co-Authors: Zhu Feilong, Kuang Dongqing

## **Object**:

This study aimed to investigate the effectiveness of a self-developed mobile health (mHealth) app-supported tailored exercise rehabilitation program on core symptoms and executive functions (EFs) in children with attention-deficit/hyperactivity disorder (ADHD)

## **Method**:

A mHealth app was developed to intelligently recommend exercise guidance for ADHD children. 145 ADHD children aged 6-10 were divided into three groups: experimental, control, and waiting. The experimental group exercised using the mHealth app, the control group with professional guidance, and the waiting group did daily aerobic exercises. Exercises were conducted 3 times a week for 12 weeks.

## **Discussion**:

The changes of inattention and hyperactivity/impulsiveness scores in the experimental group and the control group were significantly higher than the waiting group ($p<0.001$), and the changes of EFs scores were higher than the waiting group ($p<0.05$). The changes of working memory and cognitive flexibility scores in the combined subtype and 9-10 years in the experimental group were significantly lower than the control group ($p<0.05$).

## **Conclusion**:

Health with a tailored personalized exercise program had favorable effects on core symptoms and EFs in children with ADHD, and children with ADHD aged 6-8 years and inattention subtype could benefit more from it.

## **Do you have any conflicts of interest?**

No

**P-17-012**

**Sleep structure characteristics of ADHD children and the effect of exercise intervention | ID #455**

Abstract Submitter: Ren Yuanchun

Co-Authors: Kuang Dongqing, Zhu Feilong

## **Object**:

To explore the characteristics of sleep structure in children with ADHD and the effect of exercise intervention.

## **Method**:

87 children with ADHD were divided into an intervention group and a waiting group, compared with normal children. The intervention group received weekly comprehensive exercise training, while the waiting and normal groups had regular physical activity. Sleep characteristics were evaluated before and after exercise using questionnaires and ActiGraph GT9X Link. Data analysis was done using SPSS25.0.

## **Discussion**:

Before intervention, ADHD children had higher sleep questionnaire scores, more sleep resistance and anxiety, lower sleep efficiency, and longer sleep latency compared to normal children. After intervention, the intervention group showed lower total sleep scores, sleep resistance, and sleep latency, and higher sleep efficiency compared to the waiting group.

## **Conclusion**:

Children with ADHD have a variety of sleep problems. 12-week comprehensive exercise intervention can shorten sleep latency, relieve sleep resistance, and effectively improve sleep quality of children with ADHD.

## **Do you have any conflicts of interest?**

No

**P-18-001**

**Perceptions of adults with ADHD on pharmacological treatment initiation and titration for ADHD: A thematic analysis | ID #277**

Abstract Submitter: Alice Barnes

Co-Authors: Hayley Denyer, Sara Simblett, Emilie Nordby, Andrea Bilbow, Amos Folarin, Wakaho Hayashi, Henrik Larsson, Josep Antoni Ramos-Quiroga, Richard Dobson, Jonna Kuntsi

**Object**:

Despite the efficacy of pharmacological treatments for ADHD, approximately 50% of individuals discontinue their use within the first year. As medication is a first-line option for adults with ADHD, it is important to understand experiences of the treatment process, including potential challenges. This study aimed to investigate perspectives of adults with ADHD on the process of treatment initiation, titration and subsequent medication use.

**Method**:

Twenty-five adults with ADHD participated in semi-structured interviews following their participation in the ADHD Remote Technology study of Cardiometabolic Risk Factors and Medication Adherence (ART-CARMA). The interviews were analysed using inductive thematic analysis. All interviews were double-coded, with a random subset of 20% being independently conducted by a third coder.

**Discussion**:

Four main themes were generated: (1) initial side effects present during titration; (2) managing expectations of medication being a panacea, and the potential resulting disappointment; (3) the cost-benefit analysis of medication, and whether symptom improvements were sufficient to justify enduring side effects; (4) numerous areas of the process were identified where support available was felt lacking and would be beneficial going forward.

**Conclusion**:

Our initial results suggest that, while benefits of ADHD medication are often felt, this is perceived in relation to expectations of the medication and balanced against the side effects. Areas for additional support, where currently felt lacking, were also identified. Our next step will involve refining themes to understand further nuances in the data.

**Do you have any conflicts of interest?**

No

**P-18-002**

**The adore study: ADHD medication outcomes in reproduction | ID #62**

Abstract Submitter: Lena De Hondt

Co-Authors: Joke Muyldermans, Dimitri De Bundel, Ann Van Eeckhaut, Cleo Crunelle, Eline Tommelein

## **Object**:

The number of adults who have ADHD is increasing. However, research on ADHD medication use during pregnancy and lactation is limited. This study aims to: 1) explore correlations between plasma and breast milk levels, 2) estimate medication transfer to the fetus or infant, 3) assess maternity care experiences of women with ADHD, and 4) evaluate how ADHD and its treatment impact breastfeeding via the prolactin axis.

## **Method**:

From July 2025, we plan to conduct a cohort study including 96 women with ADHD and taking ADHD medication (ADHD group), and 96 women not having ADHD and not taking ADHD medication (reference group), with both groups planning a pregnancy, being pregnant, or breastfeeding.

## **Discussion**:

In the ADHD group, ADHD medication levels in plasma, cord blood, and breast milk will be quantified using our validated LC-MS/MS method to explore correlations between these matrices. We will assess maternity care experiences in both groups with the Person-Centered Maternity Care scale and applying a linear regression analysis. Hormonal levels will also be compared using a linear mixed model. Ethical approval is pending.

## **Conclusion**:

The results of our study will increase insights in how to improve personalized (non-)pharmacological care and treatment of pregnant and lactating women with ADHD. By doing so, we will be able to contribute to the development of treatment guidelines. Hereby, we seek to provide recommendations for healthcare providers based on current evidence to guide treatment decisions for breastfeeding women with ADHD.

## **Do you have any conflicts of interest?**

No

**P-18-003**

**Long-term changes of hoarding disorder symptoms among adults with ADHD treated with methylphenidate | ID #78**

Abstract Submitter: Giacomo Grassi

Co-Authors: Corinna Moradei, Edoardo Scillitani, Chiara Cecchelli, Michael Van Ameringen, Carolyn Rodriguez

**Object**:

ADHD patients show high rates of HD comorbidity, but little is known on the effect of anti-ADHD medications on hoarding symptoms. Thus, the aim of this naturalistic study was to investigate the long-term changes of hoarding symptoms among adult ADHD patients after at least one year of treatment with methylphenidate.

**Method**:

60 newly diagnosed adult ADHD outpatients underwent a psychometric assessment which included hoarding symptoms (measured through the Saving Inventory-Revised Scale, SI-R) and a cognitive assessment focused on attentional and executive functions, before and after at least one-year of treatment with methylphenidate.

**Discussion**:

Hoarding symptoms showed a significant pre-post treatment reduction  The improvement was significant for the SI-R subscales of excessive acquisition and clutter, but not for the difficulty discarding subscale. Most of the patients showed hoarding symptoms reduction (71.6%), but a subgroup of subjects didn't show any change (5%) or showed a slight worsening (23.4%). Hoarding symptoms reduction was partially predicted by ADHD improvement.

**Conclusion**:

With methylphenidate treatment, hoarding symptoms tend to improve over time in the majority of ADHD patients. The improvement is significant for clutter and excessive acquisition symptoms, but not for the core hoarding symptom of difficulty discarding. Further controlled studies on larger samples of ADHD patients with comorbid HD are needed to elucidate the potential effect of methylphenidate in this population.

**Do you have any conflicts of interest?**

No

**P-18-004**

**A preliminary study examining adjunctive cariprazine treatment to psychostimulants in adults with ADHD | ID #233**

Abstract Submitter: Alexandria Greifenberger

Co-Authors: Elssa Toumeh, Kathryn Fotinos, Tia Sternat, Irvin Epstein, Martin Katzman

**Object**:

As an atypical antipsychotic acting as a partial agonist at D2 and D3 receptors, cariprazine may have the potential to increase DA activity and improve ADHD symptoms. Therefore, this study aimed to examine whether adjunctive treatment of cariprazine would increase the efficacy of standard psychostimulant treatment in patients with ADHD who had an inadequate response to psychostimulants alone.

**Method**:

Subjects (N=10) included adult psychiatric outpatients (Mage = 42.80, SD = 11.22) previously diagnosed with ADHD, with or without secondary comorbidities. Participants were administered 1.5mg of cariprazine daily for the first week of the study and flexibly titrated up to a maximum of 3mg/day.

**Discussion**:

Results from paired samples t-tests showed significant improvements in BAARS-IV scores, $t(9) = 2.46$, $p = 0.036$, ASRS scores, $t(9) = 1.88$, $p = 0.046$, CGI-S scores, $t(8) = 3.41$, $p = 0.005$, visuospatial working memory, $t(6) = -2.56$, $p = 0.021$, episodic memory, $t(6) = -3.09$, $p = 0.011$, and response inhibition, $t(6) = -2.53$, $p = 0.022$, between baseline measures and post-treatment.

**Conclusion**:

Results from this preliminary study suggest adjunctive treatment of cariprazine may be efficacious in reducing residual ADHD symptoms, lessen clinical severity of global mental illness, and enhance cognitive functioning among individuals with ADHD. Thus, future studies should investigate the mechanisms underlying cariprazine treatment through the normalization of DA activity.

**Do you have any conflicts of interest?**

No

**P-18-005**

**5-hydroxytryptophan, a serotonin precursor, as a novel treatment for adults with ADHD: A randomised, double-blind trial | ID #279**

Abstract Submitter: Eleanor Jackson

Co-Authors: Paul Overton, Timothy Riley

**Object**:

Pharmaceutical therapies for ADHD carry a high abuse risk, evidencing a need for alternatives. One option is serotonergic intervention; serotonin is crucial in regulating arousal and attending to novel stimuli. Serotonin synthesis appears impaired in ADHD, with significant reductions in the concentration of serotonin and metabolites. We aim to assess the efficacy of 5-hydroxytryptophan (5-HTP) in reducing distractibility, a key feature of ADHD.

**Method**:

105 participants were chosen using the ASRS v1.1 screener and completed a 2(group: high ADHD traits (score ≥ 4, n = 56)/ low ADHD traits (score ≤ 1, n = 49)) x2(intervention: placebo/200mg 5-HTP) x2(time: pre/90 minutes post) randomised, double blind trial. Distractibility was assessed via task performance in task-relevant/irrelevant (flanker/n-back with audio stimuli) tasks. Efficacy was analysed with 5% two-tailed significance in a 2x2x2 ANOVA.

**Discussion**:

Unlike widespread prior reports, flanker manipulation gave only small, non-significant differences between ADHD groups pre-intervention, as did the n-back. 5-hydroxytryptophan use produced a small decrease in reaction time, observed in both ADHD groups and was also matched by similar reductions in placebo. Three-way interaction between intervention, group and time was non-significant ($F(1,210) = 0.412$, $p = 0.522$, $F(1,210) = 0.06$, $p = 0.936$).

**Conclusion**:

5-Hydroxytryptophan supplementation was not found to selectively improve or impair distractibility in any measure for individuals with high or low ADHD traits. Further work needs to be conducted with measures more sensitive to ADHD status.

**Do you have any conflicts of interest?**

No

**P-18-006**

**From struggles to success: A case study on ADHD management in adulthood | ID #230**

Abstract Submitter: Ana Kastelan

Co-Authors: Macha Bogdanović, Daniela Petrić, Sanja Brozan, Tanja Kosec

## **Object**:

Attention-Deficit/Hyperactivity Disorder (ADHD) is a chronic neurodevelopmental condition often associated with psychiatric comorbidities, including cyclothymia, personality disorders, bipolar disorder, and substance use disorders. Early diagnosis is crucial for improving the patient's quality of life by facilitating the timely initiation of individualized therapeutic interventions.

## **Method**:

We present the case of a 26-year-old male patient who had experienced concentration difficulties since childhood, facing frequent conflicts with peers, failure to meet obligations, and problematic behaviors at school. He enrolled in university and struggled with exams, he also had a history of alcohol and marijuana use. He was diagnosed with ADHD, mixed anxiety and depressive disorder, psychoactive substance abuse, and mixed personality disorder.

## **Discussion**:

Over two years, he was treated with quetiapine, risperidone, vortioxetine, sertraline, and clonazepam. Eventually methylphenidate was introduced with adjustments of doses, quetiapine and clonazepam remained. After the introduction of methylphenidate, he showed significant improvement. He passed all his exams, socialized more, no longer used marijuana, and started living independently. He remains consistent with check-ups and medication adherence.

## **Conclusion**:

This case highlights the benefits of tailored pharmacological and therapeutic interventions in adult ADHD. Early diagnosis is essential for preventing prolonged struggles, reducing comorbidity risks, and improving long-term personal and professional outcomes.

## **Do you have any conflicts of interest?**

No

**P-18-007**

**Increased QTc interval after lisdexamfetamine administration in a patient with an ADHD and Suspected Postural Orthostatic Tachycardia Syndrome | ID #329**

Abstract Submitter: Hassam Nasir Khan Alizai

Co-Authors: Hassam Nasir Khan Alizai, Raminderjit Kaur, Mirza Wasi Mohamad

### **Object**:

To present a unique case of a young female with ADHD and suspected postural tachycardia syndrome (PoTS) who developed significant QTc prolongation (513 ms) after prolonged Lisdexamfetamine use. This report seeks to add to the growing body of literature of the side effects of stimulant medications in patients of ADHD, notably so with comorbid conditions that are typically associated with normal or shortened QTc intervals.

### **Method**:

A retrospective review of the clinical data of a patient with diagnosed ADHD and suspected PoTS was conducted. Monthly ECGs monitored QTc intervals while on Lisdexamfetamine. QTc prolongation prompted discontinuation of medication, followed by normalisation of the QTc interval. Clinical data, medical history, and relevant literature were reviewed to explain the potential interaction between Lisdexamfetamine and QTc interval.

### **Discussion**:

Current literature does not indicate a link between stimulant use and QT interval prolongation, and associates PoTS with a reduced shortened QTc interval. This case highlights QTc prolongation in a patient with suspected PoTS after the administration of Lisdexamfetamine. A potential interaction between stimulant medications and electrophysiology of the heart may encourage deliberation when treating ADHD patients without known risk.

### **Conclusion**:

This case highlights the importance of monitoring the cardiovascular effects of stimulant medications, particularly in populations without known risk. It aims to foster interdisciplinary discussion between psychiatry and cardiology on the possibility of QT prolongation as a side effect of stimulant medication. The authors aim to inspire further research to clarify this potential interaction.

### **Do you have any conflicts of interest?**

No

**P-18-008**

**Substance use disorder in adults with ADHD: Clinical correlates and treatment response | ID #301**

Abstract Submitter: Camilla Perotti

Co-Authors: Luca Rolle, Gabriele Di Salvo, Giuseppe Maina

### **Object**:

The prevalence of substance use disorder (SUD) in adults with ADHD exceeds 20% (Dirks et al., 2017), and about a quarter of SUD patients have ADHD (Rohner et al., 2023). Despite several studies, risk factors for SUD in ADHD remain unclear, as does the clinical and prognostic impact of this comorbidity. This study aims to assess SUD prevalence in ADHD and analyze clinical correlates and therapy response in comorbid patients.

### **Method**:

A total of 178 patients with ADHD diagnosed according to DSM-5 criteria have been recruited, with recruitment still ongoing. Data were collected through semi-structured interviews and assessment scales at baseline and follow-up, after 6 months of therapy.

### **Discussion**:

Preliminary results indicate that SUD prevalence in adults with combined-type ADHD exceeds 40%. The most commonly used substances were cannabinoids, followed by stimulants. Combined-type ADHD patients had higher substance abuse than those with inattentive ADHD. Comorbid patients showed more severe symptoms, higher suicide attempt rates, greater comorbidity with personality disorders, and more functional impairment, except in the school domain.

### **Conclusion**:

Significant differences were also found in terms of therapy response: there was a poorer response to atomoxetine in patients with concurrent SUD. This difference was not observed with methylphenidate therapy, which also significantly reduced substance craving.

We aim to expand the sample and complete the follow-up of the recruited patients in order to finalize the data analysis.

### **Do you have any conflicts of interest?**

No

**P-18-009**

**A randomized, open-label, multiple-dose, two-way study to evaluate bioavailability of clonidine HCl ER oral suspension compared to clonidine HCl ER tablets | ID #382**

Abstract Submitter: Jim Potenziano

Co-Authors: Eman Rafla, Matt Witkovic, Jennifer Horng, Joseph Grieco

**Object**:

There is a need for additional non-stimulant ADHD medication options as monotherapy or combination therapy, as not all patients respond optimally to stimulants, the typical first-line agents. This randomized, open-label study evaluated the bioavailability of ONYDA XR (clonidine HCl extended-release oral suspension) versus clonidine ER tablets at steady state under fasting conditions.

**Method**:

Twenty healthy adult males and females were randomly assigned to receive 0.2mg clonidine HCl EROS (0.1mg/mL) once-daily in the evening for 5 days, or 0.2mg clonidine ER tablet administered in equal doses of 0.1mg tablet 12 hours apart for 5 days, with a 14-day washout between periods. Plasma concentrations of clonidine at selected time points were measured and pharmacokinetic parameters were determined.

**Discussion**:

Nineteen healthy adult subjects completed the study with 20 included in the safety dataset. After administration of a 0.2mg dose of clonidine HCl EROS once daily over 5 days, the peak steady state plasma concentration (Cmax,ss) was 107.9% and steady state relative bioavailability (AUCt,ss) was 97.7% compared with clonidine ER tablet 0.1mg twice daily. Overall, the study medications were well tolerated without serious adverse events.

**Conclusion**:

Clonidine HCl EROS 0.2mg given once-daily exhibited equivalent peak and total exposure compared to clonidine ER tablet 0.1mg twice-daily for 5 days. Clonidine HCl EROS can potentially fill an important role providing a once-daily, oral suspension, non-stimulant option for the treatment of ADHD.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Employee of Tris Pharma, Inc.

**P-18-010**

**Economic evaluation of Dyanavel XR for the treatment of ADHD in US motor vehicle drivers | ID #381**

Abstract Submitter: Jim Potenziano

Co-Authors: Jacie Cooper, John Schneider, David Fam

**Object**:

ADHD is linked to high-risk driving and motor vehicle accidents, totaling $340 billion in costs in 2019. DYANAVEL XR (DXR) showed a 43% lower crash risk compared to placebo in a randomized trial, with a crash rate comparable to non-ADHD drivers. Standard of care (SOC)-treated patients had a 52% higher crash risk than non-ADHD drivers. This analysis evaluated the economic benefits of DXR in reducing crash rates compared to SOC or no treatment.

**Method**:

A cost-impact model estimated one-year crash-related outcomes for DXR-treated patients vs SOC-treated or untreated individuals. Crash risks were assumed to align with trial and literature data: DXR-treated patients matched non-ADHD risk, while untreated and SOC-treated patients had 99% and 52% higher risks, respectively. Outcomes included cost-impact, and the number of crashes, injuries, and fatalities avoided for each arm.

**Discussion**:

Treatment with DXR would avoid 0.82 crashes, 0.016 injuries, and 0.036 fatalities annually compared to untreated patients, and 0.036 crashes, 0.007 injuries, and 0.0001 fatalities per year compared to SOC-treated patients. When compared to an ADHD population of 25% SOC- and 75% untreated patients, DXR patients would save an average of $4581/person/year. When the value of quality-of-life improvement is considered, savings increase over 7-fold.

**Conclusion**:

The findings emphasize the dual importance of addressing ADHD as a public safety concern and ensuring access to treatments that improve functional outcomes. Effective ADHD treatment enhances both driving safety and quality of life, addressing a key public health concern. The economic model shows that DXR is cost-saving compared to untreated patients and SOC-treated patients by reducing the number of motor vehicle crashes in the ADHD population.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Employee of Tris Pharma, Inc.

**P-18-011**

**Post hoc analysis of laboratory classroom data for PRC-063 (methylphenidate hydrochloride controlled-release capsules) by gender in adults and children with ADHD | ID #227**

Abstract Submitter: Jodan Ratz

Co-Authors: Ann Childress, Graeme Donnelly, Indira Maharaj

### **Object**:

To conduct a post hoc analysis of the laboratory classroom clinical data on PRC-063 (methylphenidate hydrochloride controlled-release capsules) by gender in adults and children with ADHD.

### **Method**:

Data on age, optimized dose, SKAMP, PERMP, ADHD-Rating Scale response and adverse events was summarized by patient-reported gender for both adults (18 years or older) and children (aged 6 to 12 years old) with ADHD from two separate double-blind, randomized laboratory classroom studies.

### **Discussion**:

Data for 129 adult males, 156 adult females, 102 male children and 54 female children was analyzed. Observed improvements in the ADHD Rating Scale following treatment with PRC-063 were similar in male and female participants. Following dose optimization, daily dose was similar in males and females. SKAMP data showed a similar time-course of treatment response in males and females. Adverse event frequencies were similar between genders.

### **Conclusion**:

When clinical data from two laboratory classroom studies was summarized by gender, male and female participants were of similar age and baseline ADHD severity. Both male and female participants had similar optimized daily doses of PRC-063 and had similar improvements in ADHD symptomatology. Participant gender did not lead to a differential response to PRC-063.

### **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I am the Medical Director for Elvium Life Sciences, a Canadian pharmaceutical company and the manufacturer of Foquest (PRC-063, methylphenidate hydrochloride controlled-release capsules).

**P-18-012**

**Post hoc analysis of clinical data for PRC-063 (methylphenidate hydrochloride controlled-release capsules) by gender in adults, adolescents and children with ADHD | ID #224**

Abstract Submitter: Jodan Ratz

Co-Authors: Larry J. Klassen, Graeme Donnelly, Indira Maharaj, Steven Cordeiro Matos

### **Object**:

To conduct a post-hoc analysis of clinical data on PRC-063 (methylphenidate hydrochloride controlled-release capsules) by gender in adults and children with ADHD.

### **Method**:

Data on age, optimized dose, ADHD-Rating Scale response and adverse events was summarized by patient-reported gender for both adults (18 years or older) and children (aged 6 to 17 years old) with ADHD from six double-blind, randomized studies and one open label, real-world evidence study.

### **Discussion**:

Data for 313 adult males, 359 adult females, 340 male children and 165 female children were analyzed. One adult participant did not report gender. The analysis showed improvements in the ADHD Rating Scale following treatment with PRC-063 were similar in male and female participants. In studies that allowed dose optimization, daily dose was similar in male and female participants. Adverse event frequencies were similar between genders.

### **Conclusion**:

When clinical data was summarized by gender, male and female participants were of

similar age and baseline ADHD severity. Both male and female participants had similar optimized

daily doses of PRC-063 and had similar improvements in ADHD symptomatology. Participant gender

did not lead to a differential response to PRC-063.

### **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I am the Medical Director for Elvium Life Sciences, a Canadian pharmaceutical company and manufacturer of Foquest (PRC-063, methylphenidate hydrochloride controlled-release capsules).

**P-19-001**

**Remote objective ADHD assessment to monitor treatment effects as part of UK-based virtual healthcare service, ADHD 360 | ID #126**

Abstract Submitter: Ragini Sanyal

Co-Authors: Núria Casals, Simon Larsson, Natalie Jennings, Alex Lloyd, Phillip Anderton, Mikkel Hansen

## **Object**:

ADHD 360 is an evidence-based digital service supporting those with ADHD by providing a comprehensive assessment, diagnosis and treatment service for monitoring and managing symptoms. QbCheck is a remote medical device utilized by clinicians with objective measurements of hyperactivity, impulsivity, and inattention to aid the assessment of ADHD. The aim was to evaluate the utility of QbCheck in remote monitoring treatment and symptom progression.

## **Method**:

Dataset was collected from routine QbCheck assessments done as part of the ADHD 360 model in the United Kingdom. A baseline QbCheck was given prior to diagnosis/treatment and follow up QbCheck was given after ADHD medication optimization. All subjects (aged 7-60) were diagnosed with ADHD (n =382) and prescribed on stimulant ADHD medication post diagnosis. All patients were given the ASRS/SNAP and QbCheck Rating Scale (QbRS).

## **Discussion**:

Five parameters were calculated to measure Inattention, Impulsivity, and Hyperactivity, and used to calculate a Total Symptom Score (TSS), indicating probability of having ADHD. Significant improvement from baseline to post-treatment follow up in all 5 parameters ($p<0.001$) and in TSS by 46.28% ($p<0.001$). Significant correlation between improvement in TSS and improvement in QbRS ($r=0.3895$, $p<0.001$), and with ASRS/SNAP ($r=0.34$, $p<0.001$) was found.

## **Conclusion**:

QbCheck, which correlated with subjective rating scales, can effectively inform treatment decisions, whilst also remotely monitoring ADHD medication, symptom regulation, and treatment outcomes for individuals with ADHD, especially in a virtual health care service, such as ADHD 360.

## **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I am an employee of Qbtech

**P-19-002**

**A preliminary study: The influence of comorbid psychiatric disorders and psychostimulants on misconducts among incarcerated individuals with ADHD | ID #234**

Abstract Submitter: Elssa Toumeh

Co-Authors: Gunter Lorberg, David Runnalls, Alexandria Greifenberger, Kathryn Fotinos, Tia Sternat, Irvin Epstein, Martin Katzman

**Object**:

Approximately 25% of inmates meet criteria for ADHD, making this disorder prevalent in prison settings. ADHD is associated with alcohol/substance use disorders, complicating diagnosis and treatment. Research has demonstrated that inmates with ADHD tend to engage in more violent and non-violent infractions. Thus, this study aims to examine the impact of comorbid disorders and psychostimulant treatment on misconducts among inmates with ADHD.

**Method**:

This sample consisted of inmates with ADHD placed at Central North Correctional Centre (CNCC) in Canada (n = 35). The number of misconducts were compared before psychostimulants treatment (2006-2011) to after (2012-2017).

**Discussion**:

Inmates with comorbid alcohol use disorder (M = 0.82, SD = 1.19) displayed more non-violent misconducts (t(33) = -2.23, p = 0.016) than non-comorbid inmates (M = 0.17, SD = 0.38). Post-treatment, there were no group differences. Inmates with comorbid cannabis use disorder (M = 0.55, SD = 0.69) committed significantly more violent misconducts (t(33) = -1.81, p = 0.040) than non-comorbid inmates (M = 0.21, SD = 0.41), which remained consistent.

**Conclusion**:

Inmates diagnosed with comorbid alcohol/cannabis use disorder displayed significantly more misconducts, alluding to a worsening in behavioral regulation with the use of such substances. Interestingly, psychostimulant treatment appeared to maintain or mitigate the severity of misconducts, suggesting potential benefits from the use of psychostimulants among inmates with ADHD and comorbid alcohol/cannabis use disorder.

**Do you have any conflicts of interest?**

No

**P-19-003**

**Effectivity of stimulant treatment in adults ADHD | ID #216**

Abstract Submitter: Ravian Wettstein

Co-Authors: Glenn Dumont

## **Object**:

This study retrospectively evaluated the effectiveness of first-choice stimulants methylphenidate (MPH) and dexamphetamines (dAMP), for the treatment of ADHD in terms of efficacy, tolerability, and acceptability in a large cohort of clinically diagnosed adults with ADHD.

## **Method**:

Clinical data collected between March 1, 2013, and December 31, 2020, was evaluated by analyzing precriptions up to one year of treatment. The initial efficacy of stimulant was assessed using the QbTest, a continuous performance task that quantifies ADHD-associated inattention, hyperactivity and impulsivity. If initial efficacy was indicated by the QbTest, but a transition from first- to second-choice stimulant occurred during treatment it was considered as a proxy for tolerability/acceptability issues.

## **Discussion**:

A total of 12,995 adults with ADHD (49% female; age = 33 years, SD = 11) were included. Of these, 8,087 (62%) initiated with dAMP as their first-choice stimulant treatment, while 4,908 (38%) received MPH. Both stimulants demonstrated substantial initial efficacy. For hyperactivity symptoms, percentage reductions relative to baseline were 88% for dAMP and 99% for MPH, for inattentiveness, reductions were 121% for dAMP and 126% for MPH, and for impulsivity, reductions were 55% and 64% respectively. In terms of tolerability/acceptability, a significant advanttage was observed for dAMP compared to MPH, $\chi^2(1, N=10,493) = 394$ $p < .001$. The median treatment prior to transitioning to the alternative was longer for dAMP (48.7 weeks; 95% CI [46.6, NA]) compared to MPH (26.4 weeks; 95% CI [24.6, 29]). Additional , the likehood of supoptimal treatment was significantly higher for MPH, with hazard ratio of 1,97,( 95% CI [1.84, 2.11], $p < .001$).

## **Conclusion**:

Although both stimulants showed high initial efficacy, dAMP formulations are favorable in terms of tolerability and acceptability. Thus, dAMP formulations have greater overall clinical efficacy and should be considered the first pharmacological choice in the treatment of adult ADHD.

## **Do you have any conflicts of interest?**

No

**P-19-004**

**Usability evaluation of an innovative device technology for individualised dosing of oral solid medicines | ID #415**

Abstract Submitter: Stina Wigren

Co-Authors: Anastasios Marmaras, Aili Larusson

## **Object**:

The present work summarises data from usability evaluations of an innovative device technology designed to deliver flexible doses of oral solid medicines formulated as small easy-to-swallow pellets. The technology targets individualised dosing for therapies where treatment efficacy needs to be carefully balanced against side-effects and where adherence is a challenge, such as medications for attention-deficit hyperactivity disorder (ADHD).

## **Method**:

136 participants (11-90 years, with and without ADHD) were included in ten formative usability evaluations. The test device was the OnDosis Dosage Manager (currently under development) filled with placebo pellets. Without prior training, participants completed simulated real-life use scenarios, e.g. dispensing, changing dose, understanding user interface icons. Task completion, use errors, and use of instructions for use (IFU) was recorded.

## **Discussion**:

Based on the study results, iterative design improvements were made to the device user interface with the aim to ensure safety and patient satisfaction in real-world settings. With the latest device design, 98% of tasks were successfully performed with or without help from the IFU, and 80% without any help; 88% of participants were able to use 100% of device functions with or without IFU, and 58% of the participants without any help.

## **Conclusion**:

Results indicated that users can succeed with all tasks if given enough time to familiarise themselves with the device. The data suggests that the device is intuitive, with good learnability, and is acceptable for use. Summative usability studies in target users representative of specific therapies are planned.

## **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I am a paid employee of OnDosis AB

**P-19-005**

**Evaluation of a collaborative nurse-physician model for the follow-up of children and adolescents during ADHD-medication | ID #459**

Abstract Submitter: Ann Christin Andersen

Co-Authors: Sunniva Tennfjord, Ann-Iren Dyb, Ingvill Ølstørn, Ellen Engeset, Inger-Ann Berge, Jenny Raftevold Lyngstad, Lise Reindal

**Object**:

The role of nurses in the follow-up of children and adolescents with ADHD in Norwegian Child and Adolescent Mental Health Clinics (CAMHC) have until recently been very limited. This project aimed to evaluate a new model for collaboration between physicians and nurses during titration and monitoring of children and adolescents during ADHD-medication.

**Method**:

The new model was developed and piloted in clinical practice at two CAMHCs in Western Norway. Evaluation included an anonymous questionnaire to parents, nurses and physicians, as well as group interviews with the involved clinicians and their leaders. Data collection is ongoing and will end by March 2025. Descriptive analyses of quantitative data and main results on qualitative data will be presented.

**Discussion**:

Preliminary results show overall high satisfaction with the model. Parents and clinicians report high quality of care for the involved children and adolescents and better use of resources. The model is best applied with some flexibility that ensures that individual patient needs are met. Management anchoring, as well as structures ensuring good communication and clear responsibilities are important.

**Conclusion**:

Preliminary results from the evaluation of a new collaborative nurse-physician model for follow-up of children and adolescents during titration and monitoring of ADHD-medication indicates high satisfaction and quality of care, as well as better use of resources.

**Do you have any conflicts of interest?**

No

None

**P-19-006**

**Effects of pharmacological and non-pharmacological interventions for ADHD on emotion dysregulation: Systematic review and meta-analysis | ID #409**

Abstract Submitter: Alessio Bellato

Co-Authors: Lucia Marzulli, Ana Maria Soler-Gutierrez, Gianluca Sesso, Valeria Parlatini, Samuele Cortese

### **Object**:

To understand - via systematic review and meta-analysis - the effects of pharmacological and non-pharmacological interventions for emotion dysregulation in children, young people, and adults with ADHD.

### **Method**:

Based on a pre-registered protocol (CRD42023397256), we conducted a systematic literature search (28th November 2024) to identify parallel/crossover randomized controlled trials (RCTs) involving individuals aged 6 or more with a diagnosis of ADHD based on DSM (from III to 5 editions) or ICD (9 or 10), reporting the effect of any intervention on Emotion Dysregulation (measured with a validated scale). Multi-level meta-analyses were conducted in R.

### **Discussion**:

Based on 32 RCTs included in the meta-analyses (5,007 participants in total; 38.5% adults; 54.7% randomised to intervention), stimulants (11 RCTs), non-stimulants (9 RCTs), and non-pharmacological active interventions (6 RCTs: mindfulness, yoga, dialectical behavioural therapy and interpersonal skills training) were more efficacious than placebo/control for reducing emotion dysregulation in ADHD, with small-to-moderate effects.

### **Conclusion**:

Currently available interventions have only small to moderate effects on emotion dysregulation in individual with ADHD. Understanding what specific mechanisms underlying emotion regulation in ADHD are positively affected by pharmacological and non-pharmacological interventions, would be important for developing personalized and multi-modal intervention addressing both ADHD and co-occurring symptoms.

### **Do you have any conflicts of interest?**

No

None.

**P-19-007**

**Concordance of treatment recommendations for ADHD patients between TDApp and clinical practice guidelines: A hierarchical clustering analysis with dendrograms | ID #403**

Abstract Submitter: Xavier Castells Cervelló

Co-Authors: Evgenia Baykova, Òscar Raya, David Ramírez, Cristina Lombardía, Ruth Cunill, David Losada, Tania Falkenhain, Domènec Serrano, Beatriz López

**Object**:

To compare the concordance on treatment recommendations between TDApp and relevant clinical practice guidelines on attention deficit hyperactivity disorder (ADHD).

To investigate the influence of patient complexity on the concordance on treatment recommendations between TDApp and relevant clinical practice guidelines on ADHD.

**Method**:

Fifty-eight children and adolescents with ADHD used TDApp, an AI-based tool that provides personalized treatment recommendations. TDApp recommendations were compared with those from selected US and European Clinical Practice Guidelines (CPGs) on ADHD.

Dendrograms were plotted to analyze concordance between TDApp and CG recommendations. Results for complex (patients with a chronic comorbidity) and non-complex patients were compared.

**Discussion**:

56 patients were analyzed, with half (53.6%) classified as “complex.” FDA and EMA approved drugs for ADHD were the most frequently recommended. The number and type of pharmacological interventions varied among patients with TDApp, while they did not with CPGs. In non-complex patients, TDApp recommendations clustered within those of the CPGs, whereas in complex patients, TDApp recommendations were positioned on one side of the tree.

**Conclusion**:

This study provides the first clinical evidence supporting the validity of TDApp’s treatment recommendations for ADHD patients. TDApp offers treatment recommendations similar to CPGs for non-complex patients, while differing for complex ones. TDApp emerges as a promising AI-based alternative to CPGs for assisting clinicians in treatment decision-making, particularly for complex patients.

**Do you have any conflicts of interest?**

No

**P-19-008**

**Effects of longer-term stimulant use on heart rate variability, electrodermal activity and objective motor activity in children and adolescents with ADHD | ID #219**

Abstract Submitter: Aldo Alberto Conti

Co-Authors: Natali Bozhilova, Federico Fiori, Lena Johansson, Ben Carter, Dominic Stringer, Irem Eraydin, Robert Marhenke, Paramala Santosh, Samuele Cortese, Katya Rubia

**Object**:

Children with ADHD exhibit hyper-motricity and a hypo-active autonomic nervous system (ANS) characterized by reduced electrodermal activity (EDA) and heart rate (HR). Evidence pertaining the effects of longer-term stimulant medication on the ANS of children with ADHD, however, is limited. The aim of this study was therefore to compare objective motor activity, EDA, HR and heart rate variability (HRV) in medicated vs unmedicated children.

**Method**:

Baseline data will be analysed of a phase IIb RCT comparing the efficacy of real versus sham external Trigeminal Nerve Stimulation (eTNS) on 150 children with ADHD. Analysis of covariance (ANCOVA) will investigate differences between unmedicated and medicated 8-18 years old youth with ADHD on the following physiological measures collected through a wrist-band device during 3-4 hours of testing: 1) objective motor activity; 2) EDA; 3) HR and HRV.

**Discussion**:

Preliminary analyses showed higher HR ($p < 0.01$) and lower HRV parameters ($p < 0.05$) for 31 medicated (average 2 months) children with ADHD compared to 53 unmedicated children. This finding suggests a stimulant-induced upregulation of ANS functioning. Sympathetic overactivity characterized by high HR and low HRV has been consistently linked with higher risks of cardiovascular conditions and higher mortality rates.

**Conclusion**:

Longer-term stimulant medication in youth with ADHD appears to be associated with a shift of the ANS function towards more sympathetic dominance, which could potentially be problematic for their cardiovascular health. Findings on the whole sample of 150 children with ADHD will be presented at the conference.

**Do you have any conflicts of interest?**

No

**P-19-009**

**Differential effects of a single dose of lisdexamfetamine and guanfacine on cognitive function in children with ADHD | ID #328**

Abstract Submitter: Sahid El Masri

Co-Authors: Katya Rubia

**Object**:

Attention-Deficit/Hyperactivity Disorder (ADHD) is associated with cognitive deficits which improve with stimulant and non-stimulant medications. However, the evidence on cognitive effects of the newer licensed stimulant lisdexamfetamine (LDX) and non-stimulant guanfacine (GFC) in people with ADHD is limited. Therefore, this study tested the differential acute effects of either drug on cognitive tasks in children with ADHD.

**Method**:

In a randomized, placebo-controlled, double-blind cross-over design, 22 children with ADHD received acute GFC, LDX or placebo, with a week between conditions. Tested was sustained attention, vigilance, motor & interference inhibition, time discrimination and across tasks mean reaction time (MRT), intrasubject variability (coefficient of variance; CV), & premature responses. Typically developing (TD) subjects were tested for normalization effects.

**Discussion**:

ANOVA showed that LDX improved MRT and CV compared to GFC and placebo, while GFC deteriorated CV compared to LDX and placebo. Trend effects on time discrimination and omission errors in the continuous performance task (CPT) were due LDX being better than GFC and placebo and due to GFC being worse than LDX and placebo in CPT omission errors. Both drugs normalized trend-level MRT differences in the ADHD group under placebo relative to TD controls.

**Conclusion**:

Lisdexamfetamine had drug-specific effects of improving MRT and CV, while guanfacine deteriorated CV. These clinically relevant findings suggest guanfacine may not be an optimal drug to improve cognition in children and adolescents with ADHD.

**Do you have any conflicts of interest?**

No

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**P-19-010**

**Blood pressure trends and variability in children with ADHD and/or ADHD treated with multi-layer release methylphenidate (MLR-MPH) or lisdexamfetamine (LDX) | ID #46**

Abstract Submitter: Natalie Feberova

Co-Authors: Judy Van Stralen

## **Object**:

There is conflicting data on whether stimulant treatment of children with Attention Deficit Hyperactivity Disorder (ADHD) can cause blood pressure (BP) elevation/arterial hypertension (HTN). In addition to HTN, BP variability is also associated with cardiovascular risk. The aim of this study was to analyze trends and variability of BP in children ages 6-12 with ADHD.

## **Method**:

35 participants with ADHD and co-morbid ASD received LDX (A), while 34 participants with ADHD received MLR-MPH (B) as part of two prospective studies. We performed retrospective analysis of BP levels, trends (mixed linear models) and variability (coefficient of variability [CV], average real variability [ARV]). To classify BP, the BP index (BPI) was used; BPI = patient BP / 95th percentile HTN = systolic or diastolic BPI>=1.

## **Discussion**:

Pre-treatment, 1 participant in each group had HTN. During treatment, 10 participants had 13 BP readings in HTN range (8 in A, 5 in B). Systolic BPI decreased in 82.9% and 76.5% of participants; diastolic BPI decreased in 51.4% and 32.3% of participants in A and B respectively. At last follow-up, diastolic BP remained elevated in 1 participant (A) and 2 participants (B). Median systolic BPI CV was significantly lower in A compared to B (p=0.03).

## **Conclusion**:

The prevalence of HTN was low in children treated with MLR-MPH and LDX. Systolic BP decreased in most patients during treatment. However, diastolic BP increased in a significant number of participants; those taking MLR-MPH (B) also had higher BP variability, which is considered a risk factor for cardiovascular health. This data should be verified with a larger sample size.

## **Do you have any conflicts of interest?**

No

**P-19-011**

**A phase IV, dose optimized, open label, evaluation of the effect of multilayer release methylphenidate (MLR-MPH) on sleep in children aged 6-12 with ADHD | ID #45**

Abstract Submitter: Natalie Feberova

Co-Authors: Katrina Pullia, Suzannah Wojcik, Hannah Gray, Ryan Ilines, Judy Van Stralen

**Object**:

In children with Attention Deficit Hyperactivity Disorder (ADHD), sleep difficulties have a significant negative impact on functioning and may mimic ADHD symptoms. Some studies show that stimulants impair sleep of children, while other studies argue that they may improve sleep. This aim of this study was to evaluate the effect of MLR-MPH, a methylphenidate HCl controlled release stimulant medication, on sleep, in children aged 6-12 with ADHD.

**Method**:

Sleep data was collected via actigraph wrist devices and daily sleep diaries, for one week prior to starting MLR-MPH, during a 4-week dose optimization period and a 2-week maintenance period. Primary and key secondary endpoints included: changes in mean sleep latency, total sleep time, sleep satisfaction, ADHD-RS and CGI-I/S. 41 participants were enrolled, and 34 participants completed the study.

**Discussion**:

The mean increase in sleep onset latency was 10.5 minutes (p=0.01). However, this was not clinically relevant, as it was less than the expected intra-subject variation and the standard deviation. Similar changes in latency were found in previous studies. The impact of MLR-MPH on sleep was found to be highly variable between participants, with some sleeping significantly better and some significantly worse.

**Conclusion**:

MLR-MPH slightly increased sleep onset latency, but the impact was found to be highly individualized. Those that had improved sleep had reduced latency by 2.2-fold, while those with worsened sleep had a latency 3 times longer. ADHD symptoms per the ADHD-RS, CGI-S, and CGI-I improved significantly, and the medication was safe and well tolerated in this patient population with no new adverse event signals.

**Do you have any conflicts of interest?**

No

**P-19-012**

**Duration of ADHD medication treatment among Finnish children and adolescents: A nationwide register study | ID #84**

Abstract Submitter: Terhi Kolari

Co-Authors: Miika Vuori, Hanna Rättö, Eveliina Varimo, Eeva Aronen, Kari Auranen, Leena Saastamoinen, Päivi Ruokoniemi

## **Object**:

To study the duration of attention-deficit/hyperactivity disorder (ADHD) medication treatment among children and adolescents by sex and age group in Finland during 2008–2019.

## **Method**:

This descriptive, population-based register study included all Finnish children and adolescents aged 6–18 years who started ADHD medication between January 1, 2008, and December 31, 2019 (n=40,691). Data from the National Health Insurance Dispensations register were used to calculate treatment duration as the interval between the first and last purchase, allowing up to 365 days between purchases. Kaplan–Meier survival analysis was applied.

## **Discussion**:

The median ADHD medication treatment duration was 3.2 years (95% CI 3.2–3.3; Q1 = 1.0, Q3 = 6.8). Sex and age significantly influenced duration ($p<.0001$, $p<.0001$). Boys had longer treatment than girls, and younger subjects had longer durations. Boys aged 6–8 years (32.4%) showed the longest median duration of 6.3 years (95% CI 6.2–6.5; Q1 = 2.6, Q3 = 9.4).

## **Conclusion**:

The duration of ADHD medication treatment among children in a real-world clinical setting extends well beyond the data available from randomized controlled trials and extends for several years, especially among young boys.

## **Do you have any conflicts of interest?**

No

**P-19-013**

**Benefits of methylphenidate treatment in children and adolescents with ADHD | ID #471**

Abstract Submitter: Vlatka Kovac

Co-Authors: Sanja Jandric

## **Object**:

Attention deficit hyperactivity disorder (ADHD) refers to a weak or short attention span and/or excessive activity and impulsivity inappropriate for a child's age that interferes with functioning or development.

Methylphenidate is psychostimulant who is frequently prescribed in clinical practice for treatement of ADHD, We monitored the benefits of treatement after one year of use.

## **Method**:

We monitored children and adolescents (ages 8–18 years) who had been treated with methylphenidate in clinical practices for one year.

The outcome measures we used are: the investigator-rated ADHD Rating Scale (ADHD-RS); Clinical Global Impressions improvement scale (CGI-I) and the Conners' Teacher Rating Scale–Revised: Short Form (CTRS-R:S).

## **Discussion**:

Investigating the benefits of treatment with methylphenidate we randomly assigned children and adolescents to either continuation of methylphenidate treatment or gradual withdrawal to placebo. Our results indicate that continued use of methylphenidate is still superior to treatment discontinuation after at least one year of use.

## **Conclusion**:

Continued methylphenidate treatment remains effective even after long-term use. Numerous benefits are evident. However, it is also important to follow the guideline recommendations to periodically assess patients to determine whether there is a continued need for methylphenidate prescription.

## **Do you have any conflicts of interest?**

No

**P-19-014**

**Beneficial effects of Pycnogenol® on ADHD: A review of clinical outcomes and mechanistic insights | ID #104**

Abstract Submitter: Barbara Luyens

Co-Authors: Isabelle Massat, Francisco Felgueroso-Bueno

## **Object**:

This study aims to review existing scientific literature on Pycnogenol® administration in ADHD, addressing etiology, treatment, hypothesized of mechanisms of action and the initial findings on its effects on ADHD symptomatology and cognitive function.

## **Method**:

This abstract illustrates a literature review, without experimental methodology, as it is not based on experimental work

## **Discussion**:

ADHD, a multifactorial neurodevelopmental disorder, involves complex determinism with no clearly identified genetic or environmental factors. Recent research highlights immune imbalances, neuroinflammation, and the gut microbiota's role. Pycnogenol®, rich in polyphenols, shows promise as a natural treatment, improving ADHD symptoms by reducing neuroinflammation, oxidative stress, and rebalancing the gut microbiota, with minimal side effects.

## **Conclusion**:

While the potential of Pycnogenol® as a therapeutic alternative is encouraging, further investigations are essential to fully elucidate its mechanisms and efficacy. These findings underscore the importance of exploring innovative treatments for ADHD and highlight the challenges in objective assessment and treatment development.

## **Do you have any conflicts of interest?**

No

**P-19-015**

**QbCheck as an objective measure of ADHD symptoms to ensure optimal medical treatment in a paediatric population | ID #77**

Abstract Submitter: Sarah Moll

Co-Authors: Caitlin Jardim, Tabitha Marshall, Chris Frampton, Abigail Ploeg, Haidee Barrow

**Object**:

We evaluated QbCheck's use as an objective ADHD core symptom assessment to measure medication efficacy and support optimal symptom management. It captures five variables for the core symptoms: Activity (MicroEventX); Impulsivity (Commission Error); and Attention (Omission Error, Reaction Time, Reaction Time Variance), yielding a total symptom score (TSS=0-100) indicating ADHD likelihood. Anonymous feedback on the tool was also collected.

**Method**:

57 patients (6y1m-17y) met criteria of a diagnosis of ADHD, prescribed stimulant medication and completed a QbCheck on/off medication. Statistical analysis included the total population and subgroups by medication type: Long-Acting (LA) and Immediate Release (IR) Methylphenidate. P-values were determined using a two-tailed distribution t-test with paired sample analysis and McNemar's chi-squared test.

**Discussion**:

The average QbCheck time post-medication was 2h08(IR) and 2h58(LA). 84% showed TSS reduction (mean=-49%,$P<0.001$), greatest in IR(24/57). This TSS reflects a change from high to elevated ADHD symptoms vs 28% subjective scale improvement. All variables reduced (4/5 reached statistical significance($P<0.001$), with means in the non-clinical range on medication. 75.9% of patients/parents reported QbCheck improved ADHD symptom understanding.

**Conclusion**:

These findings indicate the value of QbCheck as a tool to gain an objective assessment of medication effectiveness in children with ADHD and ensure optimisation while avoiding over treatment and side effects. The significant reduction in TSS from 'high' to 'elevated' likelihood of ADHD symptoms may also suggest optimisation was not yet achieved for many in this audit cohort.

**Do you have any conflicts of interest?**

No

**P-20-001**

**First-year MPH adherence: A data-driven guide to ADHD treatment selection | ID #139**

Abstract Submitter: Lilac Mosco

Co-Authors: Yuval Bloch

**Object**:

ADHD (Attention-Deficit/Hyperactivity Disorder) is a common treatable disorder that impairs daily functioning along the life span. Pharmacotherapy plays a central role in managing ADHD, but adherence rates can be low, impacting treatment effectiveness.

This study aimed to evaluate adherence to first-line ADHD pharmacotherapy, with a primary focus on identifying Methylphenydate (MPH) formulations that promote better adherence.

**Method**:

Using anonymized electronic data from Clalit Health Services in Israel, we analyzed 204,777 patients of all ages diagnosed with ADHD who initiated pharmacotherapy during 2000-2022. We examined the four available first-line MPH formulations: MPH IR, MPH SR, MPH LA, and OROS MPH. A Negative Binomial Regression model was developed to predict the number of medications purchased in the first year of treatment, serving as a proxy for adherence.

**Discussion**:

In a univariant model with medication type as a predictor, OROS MPH showed the highest adherence, with a 12% increase in purchases compared to MPH IR as reference level (IRR=1.12, p<2e^-16). In the multivariant model the effect of OROS MPH grew stronger with an increase of 17% (IRR=1.17, p<2e^-16). In addition, this model identified sex, age group, SES, and the interaction between medication and SES, as significant predictors of adherence.

**Conclusion**:

In conclusion, using OROS MPH as the first formulation predicts better adherence and should be considered a preferred choice for first-line treatment. Adherence to the different formulations is influenced by the patient's SES level, likely due to cost barriers. Our investigation portrays a comprehensive understanding of adherence determinants and provides an evidence-based framework for developing personalized ADHD treatment strategies.

**Do you have any conflicts of interest?**

No

**P-20-002**

**Assessment of social functioning and callous-unemotional traits in children and adolescents with ADHD being treated with methylphenidate: An observational study**

**| ID #315**

Abstract Submitter: Chiara Narducci

Co-Authors: Valeria Scandurra, Andrea Fagiolini

**Object**:

This study aims to evaluate the efficacy of MPH in children and adolescents with ADHD and comorbidities, with particular focus on social skills and adaptive functioning and the effect on CU traits.

**Method**:

Study participants were children and adolescents aged 6-18 years diagnosed with ADHD.

At baseline four questionnaires were administered Child Behavior Check List for ages 6-18, Social Responsiveness Scale-2, Conners-3, and the Callous-Unemotional Traits Inventory. The questionnaires were administered again at the follow-up visit after three months of treatment. Each questionnaire scale was statistically analyzed and compared between T0 and T3.

**Discussion**:

68 patients, mean age of 8 years were enrolled. 55 patients median age of 9 years completed the follow-up. 25 had an ADHD comorbidity. The median dose of MPH was 0.43 mg/kg. No adverse events were observed. statistically significant improvement was observed on the Total SRS-2 scale (p=0.03623). In addition, a statistically significant improvement was found on the Conners-3 Inattention scale (p=0.045)and trend toward improvement in CU traits

**Conclusion**:

MPH has been shown to be safe and effective in improving behavior in ADHD and its comorbidities. Although the improvements observed in adaptive functioning and CU traits did not reach statistical significance, interestingly, a positive trend was noted, suggesting a potential long-term benefit.

**Do you have any conflicts of interest?**

No

**P-20-003**

**Antipsychotic use in children and adolescents: Does ADHD diagnosis impact safety and prescription patterns? | ID #472**

Abstract Submitter: Inmaculada Palanca Maresca

Co-Authors: Gustavo Adolfo Centeno Soto, Lourdes García Murillo, Mónica Jodar Gómez, Javier Sánchez Cerezo, Enrique Baca-García, Belén Ruiz-Antorán

## **Object**:

The use of antipsychotics (AP) in pediatric patients has significantly increased, primarily due to the rising prescription of second-generation antipsychotics and their expanded use in non-psychotic conditions. The most prescriptions are off-label, lacking age-specific dosing guidelines and safety profiles. This study aimed to characterize antipsychotic prescribing patterns in ADHD patients and compare usage and safety with a non-ADHD cohort

## **Method**:

SENTIA is a digital platform within the Spanish Pharmacovigilance Registry of Antipsychotic Adverse Effects in Children and Adolescents. It includes patients under 17 years, regardless of diagnosis, receiving AP treatment. Patients are monitored prospectively every 6 months for an unlimited period. This study conducted a comparative analysis of two cohorts (ADHD vs. non-ADHD) to assess differences in use and safety

## **Discussion**:

260 patients were included. 38% had an ADHD diagnosis. In the ADHD group, 65% had psychiatric comorbidities. Aggression and impulsivity prompted prescriptions in 46% of ADHD versus 23% in non-ADHD (p=0.003). 44% discontinued treatment. In the ADHD group, lack of efficacy (23%) and parental decision (18%) were primary reasons vs lack of efficacy and adverse effects in non-ADHD. Safety profiles were similar.

## **Conclusion**:

The use of AP in pediatric ADHD patients aims to manage aggression and impulsivity. High discontinuation rates due to lack of efficacy and parental decisions suggest discrepancies between expected and actual treatment outcomes. Psychiatric comorbidities further complicate management. Non-pharmacological interventions should be prioritized especially when psychotic symptoms or severe disruptive behaviors are absent.

## **Do you have any conflicts of interest?**

No

**P-20-004**

**Objectifying the day-time response variation of (lis)dexamfetamine in adults with ADHD | ID #207**

Abstract Submitter: Esra Pirgon

Co-Authors: Ravian Wettstein, Glenn Dumont

**Object**:

Dexamfetamine sulfate (DEX) and lisdexamfetamine dimesylate (LDX) are recommended ADHD treatments in the Netherlands, with LDX offering extended action compared to DEX, leading to different dosing recommendations. The PK/PD profiles of LDX and DEX at therapeutic doses have not been compared before. This study aims to evaluate the day-time response variation of DEX and LDX in adults with ADHD to improve clinical guidelines and decision-making.

**Method**:

In this open-label crossover-controlled study, bioequivalent doses of DEX and LDX were administered to 16 ADHD adults. PK-effects (dexamfetamine plasma concentrations) and PD-effects (multiple assessment tools) were measured at six timepoints over 12 hours. Data were analyzed using mixed model ANOVA. Significant treatment-by-time effects were examined with Bonferroni-corrected paired t-tests, and AUC and Cmax were compared with paired t-tests.

**Discussion**:

Despite differing plasma concentration curves, DEX and LDX have similar daytime effects. Fluctuating DEX levels align with its PK profile, leading to reinforcing effects, acute tolerance, and more dysphoric, craving-like responses than LDX, potentially encouraging repeated use. Managing these effects requires strict dosing schedules, complicating titration. LDX's smoother PK profile may offer clinical benefits in some cases.

**Conclusion**:

DEX and LDX have similar daytime effects despite differing PK profiles. DEX shows more fluctuating levels, reflected in the subjective effects and craving-like responses.

**Do you have any conflicts of interest?**

No

**P-20-005**

**How addictive is dexamfetamine?: A review of the literature | ID #292**

Abstract Submitter: Alison Poulton

Co-Authors: Hazer Khalifa, Natalie Gauci, Emily Hibbert

**Object**:

Amphetamines are a class of drug that has the potential for abuse and addiction, with methamphetamine most commonly implicated. The stimulant dexamphetamine (DEX) is therefore a controlled substance. At the same time DEX is in common use as a first line treatment for ADHD in adults and children. We sought to investigate this paradox of treating children with an apparently dangerous drug of addiction by a review of the evidence.

**Method**:

A search of PubMed, Scopus and Embase was conducted using the search terms "dexamphetamine", "addiction", and "dependence". Originally planned as a systematic review, it was adjusted to a narrative review due to a lack of studies.

A secondary search was conducted of studies using DEX for treatment of ADHD. Out of four studies with a total of 205 participants, there was no mention of DEX addiction.

**Discussion**:

No good quality studies could be found. In total 7 articles (4 papers with original data and 3 reviews) were identified. A total of 4 possible cases of DEX addiction were found. All were poorly documented and inconclusive. Commonly cited papers on prescription DEX addiction did not hold up to scrutiny.

In studies using DEX for treating ADHD, addiction was not mentioned, either as a complication of treatment or as a relevant negative.

**Conclusion**:

The evidence for DEX addiction uncovered in this literature review was at best anecdotal. The failure of studies using stimulants for treatment of ADHD to report specifically on the number of participants showing any features of stimulant addiction represents a missed opportunity to provide data on this important issue.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

personal fees and non-financial support from Shire/Takeda, outside the submitted work; and book royalties from Disruptive Publishing (ADHD Made Simple).

**P-20-006**

**Metabolic effects of pharmacological treatment options in a paediatric cohort of children and adolescences with ADHD: A real-world study | ID #180**

Abstract Submitter: Adriana Prato

Co-Authors: Federica Saia, Andrea Longhitano, Irene Pisani, Rita Barone, Renata Rizzo

**Object**:

Current clinical guidelines for Attention Deficit Hyperactivity Disorder (ADHD) recommend an individualized multidisciplinary treatment approach, including pharmacological and/or non-pharmacological interventionsIn this study we investigated the possible metabolic effects of stimulant (methylphenidate) and non-stimulant (risperidone, aripiprazole) medications in a paediatric sample of ADHD patients, for 12 months.

**Method**:

Participants comprised 135 children with the ADHD diagnosis. Three subgroups were identified: 1) Group A (n=47), which receive non-stimulant medications due to the clinical presentation; 2) Group B (n=43), which receive psychostimulant; 3) Group C (n=45) which remained free of medication. Body mass index, prolactin, glycemia, triglyceridemia, HDL cholesterol and cholesterolemia levels were monitored at baseline (T0) and after 12 months (T1).

**Discussion**:

Patients of Group A presented significant increases in BMI, triglyceridemia and prolactin, respect to Group B. Participants of Group A presented higher mean values on the other investigated parameters, but these differences did not reach a statistical significance. A higher percentage of side effects was clearly detected in patients treated with non-stimulant medications.

**Conclusion**:

Both type of medications appear relatively safe for use in paediatric patients with ADHD. Further studies are needed to improve our understanding about the possible side effects of these treatment options in larger paediatric cohorts of ADHD patients.

**Do you have any conflicts of interest?**

No

**P-20-007**

**Enhanced neural gain: A mechanism for the amelioration of cognitive deficits by methylphenidate in ADHD? Protocol for a blinded, placebo-controlled study | ID #317**

Abstract Submitter: Declan Quinn

Co-Authors: Jane Mcgrath, Robert Whelan, Redmond O'Connell, Peter Murphy, Edel O'Dea, Blánaid Gavin, Matthew Shipsey, Sharon Ryan, Maria Tsougkou, Katie Haugh

## **Object**:

Despite excellent efficacy and tolerability, the gap between the known pharmacodynamic properties of methylphenidate (MPH) and the reduction of symptoms is as yet unbridged. The proposition by Hauser et al. (2016) that neuropsychological deficits in ADHD arise from low neural gain and are ameliorated by improving neural gain via stimulant administration proffers a testable multi-level framework for the therapeutic efficacy of these drugs.

## **Method**:

Data collection is underway in a double-blinded, placebo-controlled, cross-over study. Participants - 14–18 years, with confirmed diagnosis of ADHD, titrated to optimal dosage of MPH (n=40) - will attend two testing sessions (on- and off-MPH). Both sessions are preceded by a 36-hour wash-out period. 128-channel electroencephalography, pupillometry and behavioural data from a contrast discrimination task is being collected.

## **Discussion**:

Drift diffusion modelling will investigate latent psychological processes altered by MPH, supplemented by EEG signatures like the centroparietal positivity and mu/beta spectral activity. General linear models convolved with pupil impulse response functions will be fit to pupillometry time courses to ascertain the effects of MPH on neural inputs to the pupil system, facilitating an estimation of the level of global gain under MPH and placebo.

## **Conclusion**:

Combining multi-modal cognitive neuroscience techniques with a multi-level, testable framework built around Marr's levels of analysis (a deconstruction of a cognitive operation into its cumulative sub-operations (Marr, 1982)) will allow for a theory-driven, mechanistic interpretation of the effects of MPH on neural gain, and how that translates to observable improvements in cognition via altered neurophysiology.

## **Do you have any conflicts of interest?**

No

**P-20-008**

**Treatment recommendation diversity and satisfaction in ADHD: Is TDApp an AI-based alternative to clinical practice guidelines? | ID #434**

Abstract Submitter: David Ramírez Saco

Co-Authors: Evgenia Baykova, Cristina Lombardía, Inés Andreu, David Losada, Tania Falkenhain, Jordi Risco, Ruth Cunill, Òscar Raya, Beatriz López, Xavier Castells

## **Object**:

To compare therapeutic recommendations from TDApp with those from ADHD clinical guidelines and evaluate patient satisfaction with TDApp. Additionally, to evaluate physicians' satisfaction with recommendations from all sources and examine how age, gender, and patient complexity influence outcomes.

## **Method**:

32 pediatric ADHD patients needing treatment changes used TDApp, an AI-based personalized treatment recommendations provider. TDApp was compared with selected US and European Clinical Practice Guidelines (CPGs) on ADHD. Patient satisfaction with TDApp was rated (0-5), while physicians rated all sources (-2 to +2). Blau's index examined recommendation differences. The impact of age, gender, and comorbidities on physician satisfaction was assessed.

## **Discussion**:

TDApp provided more treatment diversity (8 recommendations, Blau's: 0.70) than other sources (2 each, Blau's: 0.06), though half of the patients received none. Patient satisfaction with TDApp exceeded 75%. After Bonferroni adjustments, physician satisfaction with TDApp matched other sources, while NICE CPG outperformed the Spanish and AAP CPGs.

Physicians rated NICE CPG lower for complex patients, with no impact from age or gender.

## **Conclusion**:

TDApp offered greater treatment diversity than ADHD clinical guidelines, with high patient satisfaction and comparable physician satisfaction. TDApp might be an alternative to CPGs, particularly in complex patients.

## **Do you have any conflicts of interest?**

No

**P-20-009**

**ADHD medication and Japan | ID #483**

Abstract Submitter: Takuya Saito

**No Abstract text available**

**P-20-010**

**Comparative bioavailability of methylphenidate powder for prolonged-release oral suspension and methylphenidate prolonged-release chewable tablets versus methylphenidate immediate-release tablets | ID #253**

Abstract Submitter: Alex Schneider-Pérez

Co-Authors: Josep Antoni Ramos-Quiroga, Marta Forcadell Ferré, Mohammed Bouhajib

## **Object**:

Various methylphenidate (MPH) formulations are available to treat attention-deficit/hyperactivity disorder (ADHD) but unmet needs still exist for individuals with swallowing difficulties or requiring flexible dosing options. Two phase 1 studies evaluated the bioequivalence and safety/tolerability of two prolonged-release (PR) MPH formulations, an oral suspension and a chewable tablet, compared to an immediate-release (IR) oral tablet formulation.

## **Method**:

Two phase 1, open-label, single-dose studies were conducted. Healthy volunteers received MPH PR oral suspension (60 mg, Study 1) or chewable tablet (40 mg, Study 2) and MPH IR tablet (60 mg in Study 1, 40 mg in Study 2) in a crossover manner. Blood samples were collected over 24h. Adverse events (AEs) were documented. Statistics for pharmacokinetic and safety analysis were performed using the PROC GLM procedure on quality assured data.

## **Discussion**:

In each study, 24 individuals (mean age 39–42 years; ~50% male) were randomized. 23 received MPH PR (oral suspension in Study 1, chewable tablets in Study 2) and 24 received MPH IR. The relative mean plasma d-MPH AUCt ratios had 90% CIs of 82.30–87.18% (Study 1) and 90.01–97.52% (Study 2). Treatment-emergent AEs occurred in 46–54% of participants, were typical of orally administered MPH, mild in severity and resolved prior to study end.

## **Conclusion**:

The MPH PR oral suspension and chewable tablet formulations are bioequivalent in terms of the total extent of exposure (AUC) to MPH IR oral tablets and are tolerable in healthy adults. These formulations may represent an important addition to the treatment options for the management of ADHD, allowing a more individualized approach to the treatment of children and adolescents living with ADHD.

## **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Full-time employee of Neuraxpharm

**P-20-011**

**Therapeutic equivalence of generic vs. original immediate-release methylphenidate in treating children with ADHD: A randomized crossover study | ID #284**

Abstract Submitter: Thanarat Suansanae

Co-Authors: Ananya Sinrachatanant, Buranat Runglaksameesri, Janyaporn Jiamjaroenkul, Thaweesak Sirirutraykha, Theerarat Tan-Khum

## **Object**:

To evaluate the efficacy and safety of generic immediate-release methylphenidate (IR-MPH) in treating children with attention deficit/hyperactivity disorder (ADHD), compared to the original.

## **Method**:

A randomized, crossover study was conducted at Child and Adolescent Psychiatry Hospital, Thailand. ADHD children aged 6-12 years old and on stable dose of IR-MPH with stable ADHD symptoms were enrolled. Participants were assigned to receive either original or generic IR-MPH for 4 weeks. Primary outcome was mean change in parental SNAP-IV scores after 4 weeks of treatment, comparing original and generic IR-MPH.

## **Discussion**:

Thirty-three patients were enrolled. Most of them were male (81.8%) and average age of 8.8+1.3 years. At the end of 4-week treatment, mean SNAP-IV score improved in both groups compared to baseline, but changes were not show statistically significant. Additionally, SNAP-IV score change between original and generic IR-MPH groups did not show significant differences. The generic IR-MPH reported more frequent side effects compared to the original.

## **Conclusion**:

Generic IR-MPH demonstrated therapeutic equivalence to the original medication in terms of efficacy. However, the generic formulation was associated with a higher frequency of side effects, which should be considered when prescribing this treatment.

## **Do you have any conflicts of interest?**

No

**P-20-012**

**Association of ADHD with Myopia among Hong Kong Children | ID #166**

Abstract Submitter: Jason Yam

Co-Authors: Xiunian Chen, Xiu Juan Zhang, Yuzhou Zhang, Fangyao Tang, Ka Wai Kam, Clement C. Tham, Chi Pui Pang, Li Jia Chen, Patrick Ip, Jason Yam

## **Object**:

To report the myopia prevalence among children with ADHD in Hong Kong.

## **Method**:

This repeated cross-sectional study recruited children aged 6 to 8 years in Hong Kong using a stratified, clustered randomized sampling frame. The children were invited to the Hong Kong Eye Hospital for detailed ocular examinations. Their parents completed the SWAN Questionnaire. With parental consent, we extracted ADHD diagnosis and prescription information from the Hong Kong Hospital Authority's electronic medical records (EMR) system.

## **Discussion**:

Totally 474 children with ADHD and 9950 controls were included. ADHD with less myopia (OR=0.75), higher spherical equivalent (SE) (β=0.13), and shorter axial length (β=-0.07) than controls. ADHD with oral methylphenidate had less myopia (OR=0.61), higher SE (β=0.36) and shorter AL (β=-0.25) compared to controls. For each one-point increase in attention-deficit scores, children were found to be less myopic (β=-0.13).

## **Conclusion**:

This study showed ADHD taking oral MPH or with more attention-deficit symptoms had less myopia. MPH acts by inhibiting the reuptake of dopamine and norepinephrine; meanwhile, dopamine serves as a stop signal for myopic eye growth.

## **Do you have any conflicts of interest?**

No

**P-20-013**

**Comparative effectiveness of second-line ADHD medications among children and adolescents using real world data: A target trial emulation study | ID #373**

Abstract Submitter: Le Zhang

Co-Authors: Nanbo Zhu, Ralf Kuja-Halkola, Brian M. D'Onofrio, Isabell Brikell, Paul Lichtenstein, Henrik Larsson, Zheng Chang

**Object**:

Stimulant medications, particularly methylphenidate (MPH), are the cornerstone of ADHD management. However, uncertainty persists regarding the choice of second-line medications. This study compares the risks of three most commonly prescribed second-line medications, following MPH initiation, on five adverse outcomes including suicidal behaviour, substance misuse, criminality, road traffic accidents, and accidental injuries.

**Method**:

This longitudinal observational study included all Swedish children and adolescents who dispensed Guanfacine (GFC), Lisdexamphetamine (LDX) or Atomoxetine (ATX) following MPH initiation between 2014 and 2020. Follow-up started from dispensation until death, emigration, two years after dispensation, or December 31st, 2020, whichever came first. Baseline and time-varying covariates were considered within the target trial emulation framework.

**Discussion**:

The study cohort included children and adolescents who started second-line treatment with GFC (n=2,794), LDX (n=26,258), or ATX (n=7,291) following MPH initiation. Over a two-year period, the risk of outcomes was comparable between the individual dispensing LDX and ATX except for substance misuse. Individuals dispensing GFC were associated with a lower risk of suicidal behaviour, criminality, and road traffic accident compared to ATX.

**Conclusion**:

Second-line ADHD medications GFC, LDX, and ATX showed different effectiveness on long-term adverse outcomes associated with ADHD. Further exploration of treatment heterogeneity and personalized approaches is warranted, considering differences in mode of action.

**Do you have any conflicts of interest?**

No

N/A

**P-20-014**

**The promoting effects of digital targeted cognitive training in medication treatment for children with ADHD? A randomized controlled study | ID #67**

Abstract Submitter: Yu Zhu

Co-Authors: Chen Dang, Yuan Feng, Guisen Wu, Shaogen Zhong, Xiangsheng Luo, Naizhen Shi, Yufeng Wang, Li Sun

## **Object**:

Attention deficit hyperactivity disorder (ADHD) is a common neurodevelopmental disorder often managed with medication. Improving cognitive functions alongside medication treatment is crucial for better outcomes. This study aimed to investigate the therapeutic effects of combining digitally targeted cognitive training (TCT) with medication compared to medication monotherapy, on ADHD core symptoms and cognitive functions.

## **Method**:

A total of 124 children with ADHD were assessed at baseline and followed up for eight weeks, with 60 receiving TCT combined with medication, and 64 receiving medication treatment (methylphenidate or atomoxetine) alone. The ADHD Rating Scale IV (ADHD-RS) was used to assess the severity of ADHD symptoms. The Behavior Rating Inventory of Executive function (BRIEF) and ten cognitive tasks were used for assessment of cognitive functions.

## **Discussion**:

The results showed that inattention and hyperactivity/impulsivity symptoms decreased more in TCT and atomoxetine combination group than in atomoxetine monotherapy group. Similar effects were observed in ecological executive functions, especially, working memory improvements were significantly correlated with changes in ADHD core symptoms. However, no such differences were observed between the two groups that treated with methylphenidate.

## **Conclusion**:

These findings suggested a more significant amelioration on ADHD core symptoms in atomoxetine combination group, possibly due to a more significant improvement in ecological executive functions. This study provided preliminary evidence of enhanced therapeutic efficacy in combining TCT and atomoxetine, which contributed to development of personalized treatments, such as the treatment for ADHD children who are not suitable for methylphenidate.

## **Do you have any conflicts of interest?**

No

**P-21-001**

**Do reading and math make you squirm? The role of hyperactivity in cognitively demanding early academic tasks | ID #259**

Abstract Submitter: Luisa Bermeo

Co-Authors: Paulo Graziano, Jamie Spiegel

## **Object**:

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder characterized, in part, by excessive movement (APA, 2013). Researchers have hypothesized that movement may serve as compensatory behavior to facilitate concentration during tasks requiring higher cognitive demands (Kofler et al., 2016). This study aimed to explore the relationship between movement and cognitively demanding academic tasks in a naturalistic setting.

## **Method**:

Participants (N=48) were children with ADHD (67% male; 84% Hispanic) enrolled in the Summer Treatment Program for Pre-Kindergarteners (Graziano et al., 2014). Each participant wore an actigraphy device at the waist for four days to capture movement for each academic period. A linear mixed model was utilized to examine movement across periods, with participant ID as a random effect and sex and pre-intervention IQ entered as covariates.

## **Discussion**:

The period of Art and Computers (A/C) was chosen apriori to serve as the control condition based on its inherently lower cognitive demand. Children demonstrated significantly higher rates of movement during Math (f=1.62; p=.003) and Reading (f=1.63; p=.02) as compared to movement during A/C. Contrary to our original hypotheses, Centers and Seatwork (combined reading and math content) periods did not elicit higher rates of movement than did A/C.

## **Conclusion**:

Although somewhat conflicting, these findings may suggest that more academically challenging and potentially cognitively demanding academic periods may result in higher rates of movement in young children with ADHD. If replicated these findings may have longer-term implications for academic accommodations and treatment recommendations for children with ADHD.

## **Do you have any conflicts of interest?**

No

**P-21-002**

**Paying ttention to Teeth: Long-term oral health outcomes of ADHD in Israeli youth**

**| ID #240**

Abstract Submitter: Alexander Bershadsky

Co-Authors: Eugene Merzon, Shai Ashkenazi

### **Object**:

This study investigated the association between Attention-Deficit/Hyperactivity Disorder (ADHD) diagnosis and oral health outcomes in children, focusing on the roles of socioeconomic status (SES), ethnicity, and geographic residence, while accounting for the equal access to dental services provided by Leumit Health Services (LHS).

### **Method**:

A 20-year cohort study using the LHS database analyzed 724,129 individuals, focusing on children aged 5–18 with ADHD (n = 18,558) and matched controls (n = 37,116). ADHD diagnoses were identified via ICD-9/10 codes, and oral health outcomes via ICD-9-CM codes. Participants were matched by age, gender, SES, ethnicity, and region. Logistic regression assessed ADHD's impact on oral health, adjusted for confounders.

### **Discussion**:

A 20-year cohort study used the LHS database, including 724,129 individuals. It analyzed children aged 5–18 diagnosed with ADHD (n = 18,558) and matched controls (n = 37,116). ADHD diagnoses were identified via ICD-9/10 codes, and oral health outcomes using ICD-9-CM codes. Participants were matched by age, gender, SES, ethnicity, and region. Logistic regression assessed ADHD's impact on oral health while adjusting for confounders.

### **Conclusion**:

Childhood ADHD diagnosis is associated with a significantly elevated risk of adverse oral health outcomes. These findings emphasize the urgent need for targeted prevention strategies, regular dental check-ups, and tailored interventions to address the oral health challenges faced by children with ADHD, independent of SES-related confounding

### **Do you have any conflicts of interest?**

No

**P-21-003**

**Young adults with ADHD transitioning into a public adult specialist service: Supporting pathway and patient characteristics | ID #48**

Abstract Submitter: Marie Boilson

Co-Authors: Sophie O Dea

## **Object**:

The aim of this study was to capture effectiveness of a transition pathway from Child and Adolescent Services to a public funded Adult ADHD Specialist Service, designed though a "Design Thinking" stakeholder engagement.

We sought to capture specific characteristics to best understand needs and inform service development. The level of complexity and comorbidity profile for mental illness and neurodevelopmental differences were of interest.

## **Method**:

A "Design Thinking" stakeholder engagement informed development of the pathway, implementing a process versus transfer. A retrospective file review of transfers in 2024 was used.

Attendance at first adult appointment was captured.

Patient characteristics were captured - gender, referral indication, age at diagnosis, comorbidities and co-occurring neurodevelopmental differences. Complexity was measured based on defined criteria.

## **Discussion**:

Transition from adolescence to adult services is a vulnerable time and can be associated with unfavourable outcomes. Attrition is high.

Design Thinking aims to understand users and produce innovative solutions. This was used to inform development of the pathway.

Patient profiles are required to understand need. Complexity has been defined and has specific service implications . Gender differences in presentation need to be better understood

## **Conclusion**:

73% of ADHD young adults meet definition of complexity. There were significant gender differences in age at diagnosis, females diagnosed later, referral gender ratios were equal. 56% transfers diagnosed during pandemic years. Females not referred to CAMHS primarily for ADHD. 40% had autism / suspected autism. 60% engaged in self harm. 46% comorbid mental illness. 50% sensory sensitivities.

In-reach process was effective in supporting attendance

## **Do you have any conflicts of interest?**

No

**P-21-004**

**Psychosocial impact of ADHD and learning disorders in adolescents | ID #204**

Abstract Submitter: Ellen Braaten

Co-Authors: Isabella Ramos, Pieter Vuijk, Alysa Doyle, Gina Forchelli

**Object**:

ADHD and learning disorders (LDs) are highly comorbid and these diagnoses have, independently, been linked to increased risk for negative psychosocial outcomes compared to typical peers. There is limited literature on any additional effect LDs have on outcomes in ADHD. This study aims to examine whether LDs and ADHD confers additional risk for negative psychosocial outcomes.

**Method**:

In a sample of 203 clinically-referred youth ages 12 – 17 (Ngirls = 92 (45.3%)) with 1 (N=116 (57.1%) or more LDs (N=87 (42.9%)), a mixed-effects models was used to examine if there was an association of ADHD status (NADHD= 131 (64.5%)) on parent-rated psychopathology and adaptive skills using the BASC-2/3 and whether LD group (1 versus 1) has a moderating or additive effect.

**Discussion**:

ADHD status was significantly associated with psychopathology and adaptive skills, especially on activities of daily living. LD group was not significantly associated with these variables. No effect for teacher rated adaptive skills was found for ADHD or LD group. A significant effect for ADHD on school functioning was found), especially regarding attention problems. LD status did not significantly contribute to the model.

**Conclusion**:

Having ADHD increases risk for parent-reported psychopathology symptoms and adaptive dysfunction in youth with LDs. Teachers reported poorer school functioning. Having one or more LD did not significantly impact these outcomes. This suggests that for those with LDs, ADHD symptoms may be an intervention target to improve outcomes.

**Do you have any conflicts of interest?**

No

**P-21-005**

**Is positive illusory bias unique to ADHD?: Exploring its role and connections to psychosocial outcomes**

**| ID #281**

Abstract Submitter: Giulia Crisci

Co-Authors: Irene C. Mammarella

**Object**:

Children with ADHD often exhibit a Positive Illusory Bias (PIB), overestimating their abilities. It's unclear whether PIB is unique to ADHD or also occurs in other conditions like Autism. Additionally, the impact of PIB on psychological outcomes is uncertain. This study compared self-perceptions of abilities in children with ADHD, ASD, and no diagnosis (ND), focusing on social skills, behavioral problems, and psychological outcomes of PIB.

**Method**:

Two studies were conducted (8-16 years): Study 1 included 50 children with ADHD, 49 with ASD, and 121 ND participants; Study 2 involved 47 children with ADHD and 47 ND children. Both used parallel questionnaires completed by children and parents to assess social abilities and compare self- and parent-reported perceptions. Study 1 also examined behavioral issues, while Study 2 focused on self-confidence and internalizing/externalizing symptoms.

**Discussion**:

Linear regressions in Study 1 showed that children with ADHD significantly overestimated their social abilities compared to ASD and ND groups, suggesting PIB is specific to ADHD. However, ADHD children did not overestimate their behavioral problems. In Study 2, social PIB in ADHD children was linked to higher self-confidence but also correlated with increased externalizing behaviors.

**Conclusion**:

In conclusion, PIB seems to be a distinct trait of ADHD, especially in specific domain as social functioning, with both positive and negative psychological outcomes. While it may boost self-confidence, it also correlates with externalizing behaviors. These findings underline the need to consider social PIB when assessing ADHD in children, emphasizing its clinical relevance for treatment and intervention strategies, which will be explored further.

**Do you have any conflicts of interest?**

No

**P-21-006**

**How media can inspire adolescents with ADHD and help them with developing character strengths | ID #211**

Abstract Submitter: Biqing Chi

Co-Authors: Rebecca De Leeuw, Martine Hoogman, Marieke Fransen

**Object**:

This is a cross-cultural qualitative study which aims to examine how media can inspire adolescents with Attention-Deficit Hyperactivity Disorder (ADHD), also with developing character strengths.

**Method**:

Semi-structured interviews were conducted with 30 participants (ages 10–24) diagnosed with ADHD, including 13 Dutch and 17 Chinese participants. Both sexes were equally represented. Interviews were transcribed and translated to English, and, based on the principle of grounded theory, analyzed with MAXQDA. For more details, including the interviews, please check OSF https://osf.io/s729c/?view_only=d7fc74f7ae9741d28852458be5738be4.

**Discussion**:

Preliminary findings indicated media can inspire adolescents with ADHD under six themes: 1. portrayals of character strengths; 2. mood/emotion/behavior management; 3. knowledge of ADHD; 4. acceptance/embracing ADHD; 5. connecting with others; 6. other inspiration from others with(out) ADHD. Besides media inspiration, they reported feeling happy, grateful, hopeful, meaningful and loved after creating and sharing ADHD media content.

**Conclusion**:

In conclusion, participants indicated that media can be inspiring in two dynamic ways, both for media inspiration and media creation. Media helps them develop character strengths, manage behaviours, foster connections with others, and provide knowledge for managing their ADHD. Further, except for the inspiration of media, the creation of media content could be inspiring as it could lead to emotional fulfillment and empowerment.

**Do you have any conflicts of interest?**

No

**P-21-007**

**Character strengths in people with ADHD: A systematic review | ID #59**

Abstract Submitter: Biqing Chi

Co-Authors: Rebecca De Leeuw, Marieke Fransen, Martine Hoogman

**Object**:

This study provides an overview of the character strengths of people with ADHD. Character strengths are positive traits reflected in thoughts, feelings, and behaviors. While prior research examined only specific strengths like creativity or self-regulation, no study has systematically examined all 24 strengths. Identifying and applying these strengths can promote personal growth, fulfillment, and well-being in people with ADHD.

**Method**:

A systematic search of PsycINFO, Web of Science, and PubMed was performed up to 14 June 2023, identifying 56 studies on ADHD and character strengths, with 47 quantitative and 9 qualitative research. Data were extracted by age group (children, adolescents, and adults), sample size, and character strengths measurement methods. The review followed PRISMA guidelines and was pre-registered on the Open Science Framework (DOI: 10.17605/OSF.IO/YZHK2).

**Discussion**:

Qualitative studies were often conducted with small sample sizes, underscoring the necessity of larger samples in future research. Only creativity, curiosity, zest, social intelligence, humor and self-regulation have been examined in quantitative studies, highlighting the need to examine other 18 character strengths. Current measurements rely mainly on single questionnaire-based methods, emphasizing the need for more innovative and valid tools.

**Conclusion**:

Preliminary findings indicate bravery, kindness, appreciation of beauty and excellence, hope, and humor as strengths in qualitative studies. Quantitative studies show that people with ADHD score higher on creativity, curiosity and zest. No significant differences were found in social intelligence or humor, and all ADHD groups performed poorly on self-regulation. No studies have explored other character strengths in people with ADHD.

**Do you have any conflicts of interest?**

No

**P-21-008**

**Examining the associations between ADHD and later sleep problems | ID #27**

Abstract Submitter: Madeline Curzon

Co-Authors: Melissa Hernandez, Leanett Reinoso, Eva Goldhagen, Margaret Johansson, Catherine Coccia, Anthony Dick, Paulo Graziano

## **Object**:

Those with attention-deficit/hyperactivity disorder (ADHD) and other disruptive behaviors disorders (DBDs; i.e., Oppositional Defiant Disorder [ODD]) are at risk for poor sleep (Becker et al., 2014). However, less is known as to how early childhood diagnosis and symptom (sx) severity predict later sleep problems. The goal is to identify and differentiate the associations between ADHD, comorbid DBDs, and sleep problems 2-3 years later.

## **Method**:

Parents of children with and without ADHD and comorbid DBDs (n = 32 ADHD, n = 95 ADHD+DBD, n = 96 typically-developing [TD] 66.4% males, Mage = 5.47; 82.1% Latino) completed a diagnostic assessment when children were 4-7 years old. Parents completed the Disruptive Behavior Disorder Rating Scale (DBD-RS; Fabiano et al., 2006) at baseline and the Child Home Sleep Questionnaire (CSHQ; Owens et al., 2000) 2-3 years later.

## **Discussion**:

Compared to TD, children with ADHD+DBD experience greater Parasomnia sx ($F(2,220)=3.55$, $p=.03$) while children with just ADHD experience more Sleep Duration problems ($F(2,220)=3.29$, $p=.04$). Poisson regression analyses indicated that Inattention and total ADHD sx severity predicted Daytime Sleepiness problems ($B=.49$, $p<.001$; $B=.37$, $p<.01$), while ODD sx severity predicted Parasomnia and Total Sleep problems ($B=1.25$, $p<.001$; $B=.32$, $p<.001$)

## **Conclusion**:

Youth with ADHD are at risk for greater sleep problems, specifically daytime sleepiness and sleep duration problems. Sleep problems differed by sx domain and severity, indicating that greater attention to the presentation of ADHD and disruptive behaviors is needed to inform intervention efforts related to sleep and other health behaviors.

## **Do you have any conflicts of interest?**

No

**P-21-009**

**Parents with ADHD: Is parenting efficacy related to self-perceptions of the disorder? | ID #325**

Abstract Submitter: Tali Devor

Co-Authors: Tzlil Einziger, Andrea Berger

**Object**:

ADHD symptoms among adults are linked to daily life challenges, including challenges in parenting (Miklósi et al., 2024). However, these challenges may not emerge solely from the disorder's symptoms but also from personal perceptions and attitudes toward the disorder (e.g., sense of personal control). We hypothesized that parents' perceptions toward their ADHD would mediate the correlation between their symptoms and their parental self-efficacy.

**Method**:

205 parents with ADHD participated in an online study and completed questionnaires regarding their own ADHD symptoms, perceptions of their disorder (i.e., personal control and emotional attitudes), parental self-efficacy, and their child's ADHD symptoms. We used structural equation modeling to assess the mediating effect of different disorder perceptions on the correlation between parental ADHD symptoms and their sense of parental self-efficacy.

**Discussion**:

Both perception of personal control (β = -.048, p = .024) and a negative emotional attitude toward their disorder (β =.041, p = .029) significantly mediated the correlation between parental ADHD symptoms and parental self-efficacy, above and beyond socioeconomic status, depressive symptoms, and their child's ADHD symptoms. The model fit indices indicate good model fit (CFI = .981, RMSEA = .066; R^2[parental self-efficacy] = .27).

**Conclusion**:

ADHD symptoms does not alone portray the impact of the parents' disorder on their parenting challenges. This relationship seems to go through both the symptoms and the parents' coping styles, as expressed by their perceptions of their disorder. Thus, it is important to assess these perceptions, as they may serve as intervention targets for helping parents with ADHD improve their self-efficacy and, in turn, benefit themselves and their children.

**Do you have any conflicts of interest?**

No

**P-21-010**

**Mind wandering as a mediator in the link between ADHD and creativity: Evidence from two independent samples | ID #146**

Abstract Submitter: Han Fang

Co-Authors: Amy De Roubaix, Oliver Grimm, Georg Ziegler, Sarah Kittel-Schneider, János Réthelyi, Tünde Kilencz, Lívia Balogh, Corina Greven, Martine Hoogman

**Object**:

Creativity, particularly divergent thinking and creative achievement, has been identified as a strength in ADHD adults. Mind wandering, associated with both ADHD and creativity, may mediate this link, but its role remains unexplored. This study examined if mind wandering mediates the link between ADHD traits (inattentiveness and hyperactivity-impulsivity) and creativity (divergent thinking and creative achievement) across two independent samples.

**Method**:

Study 1 involved 322 participants from the European College of Neuropsychopharmacology (ECNP) test battery. Study 2 involved 403 UK participants recruited via Prolific. Both studies assessed ADHD traits, mind wandering, and creative achievement; divergent thinking (fluency, flexibility, originality) was assessed only in Study 2. Correlation, regression, and mediation analyses explored associations and the mediating role of mind wandering.

**Discussion**:

ADHD traits positively correlated with creative achievement and mind wandering (both datasets); inattentiveness positively correlated with flexibility (dataset 2). Mind wandering positively correlated with divergent thinking (dataset 2) and creative achievement (both datasets). Mediation analyses showed that mind wandering mediated the link between ADHD traits and both divergent thinking (dataset 2) and creative achievement (both datasets).

**Conclusion**:

Our results confirm that ADHD traits are associated with creativity, with mind wandering emerging as a mediating factor. These findings, replicated across two independent samples, highlight the potential of mind wandering to explain the ADHD-creativity link. Our study, through exploring factors linking ADHD and creativity, may open new avenues for fostering strengths in ADHD.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

M.H. has received a speaker fee from Medice. The remaining authors have declared that they have no potential conflicts of interest.

**P-21-011**

**The SIBS intervention for siblings of children with ADHD: Results from a randomized controlled trial | ID #137**

Abstract Submitter: Krister Fjermestad

Co-Authors: Solveig Kirchhofer, Torun M Vatne

**Object**:

SIblings of children with ADHD are at increased risk of psychosocial problems. We evaluated the effectiveness of SIBS, a preventive intervention for siblings and parents of children with neurodevelopmental disorders, with ADHD as the largest diagnostic group, aiming to improve sibling mental health and parent-child communication. SIBS is manual-based and was delivered as five sessions over two weeks in primary care and hospitals in Norway.

**Method**:

This two-arm, unmasked cluster randomized controlled trial registered on ClinicalTrials.gov (NCT04056884), included 288 siblings (M age = 10.4 years, SD = 1.9) and 288 parents, randomly assigned to intervention or waitlist control groups. Eligible siblings were aged 8–16 years and had a sibling diagnosed with a neurodevelopmental disorder (35% had ADHD as their primary disorder). The SIBS intervention was delivered over 5 sessions.

**Discussion**:

At 3-month follow-up, siblings in the intervention group showed fewer mental health problems rated by siblings, parents and teachers (average effect size (d = 0.15) and better parent-child communication rated by siblings and parents (average effect size d = 0.22). Analyses included intention-to-treat (ITT) and complier average causal effects (CACE). The differences were non-significant when accounting for group nesting effects.

**Conclusion**:

The SIBS intervention shows promise as a preventive intervention for siblings, given that the effect size differences in favor of intervention was comparable or larger to those typically observed in prevention trials. More research is needed to determine how effects can be optimized and if some subgroups had better effects than others. SIBS is one of few manual-based sibling interventions with emerging evidence from pre-registered RCTs.

**Do you have any conflicts of interest?**

No

**P-21-012**

**Effectiveness of a group intervention to improve mental health in siblings of children with chronic disorders: A cluster randomized controlled trial | ID #175**

Abstract Submitter: Krister Fjermestad

Co-Authors: Solveig Kirchhofer, Trude Fredriksen, Torun M Vatne

**Object**:

Siblings of children with ADHD are at increased risk of mental health difficulties. The risk is in part related to family communication challenges. We evaluated the effectiveness of SIBS, a preventive intervention for siblings and parents of children with neurodevelopmental disorders, including ADHD, aiming to improve sibling mental health and parent-child communication. SIBS is a 5-session manual-based group intervention.

**Method**:

This two-arm, unmasked cluster randomized controlled trial registered on ClinicalTrials.gov (NCT04056884), included 288 siblings (M age = 10.4 years, SD = 1.9) and 288 parents, randomly assigned to intervention (k = 34, n = 137) or waitlist control (k = 35, n = 151) groups. Eligible siblings were aged 8–16 years and had a sibling diagnosed with a neurodevelopmental disorder, of whom 35% had ADHD.

**Discussion**:

The primary outcome was sibling mental health, rated by siblings, parents, and teachers. The secondary outcome was parent-child communication, rated by siblings and parents. At 3-month follow-up, the intervention group showed fewer mental health problems (mean effect size d = 0.16) and improved parent-child communication (mean effect size d = 0.21) compared to waitlist, albeit not statistically significant

**Conclusion**:

The SIBS intervention demonstrated small consistent positive effects on sibling mental health and parent-child communication, suggesting a promising preventive program for siblings of children with neurodevelopmental disorders, including ADHD. More research is needed to identify subgroups with better or poorer effects, and identify implementation facilitators.

**Do you have any conflicts of interest?**

No

**P-21-013**

**Can hyperfocus help compensate for academic difficulties in university students with ADHD symptoms? | ID #215**

Abstract Submitter: Miguel Garcia Pimenta


## **Object**:

Attention Deficit Hyperactivity Disorder (ADHD) has been associated with poor academic achievement in university students and with increased frequency of hyperfocus. Hyperfocus has been associated with increased cognitive performance. This study aims to investigate whether hyperfocus during academic activities may help compensate for the academic difficulties experienced by university students with different levels of ADHD symptoms.

## **Method**:

Within a non-clinical sample of first-year university students (N=903), we analyzed self-reports of adult ADHD and frequency of hyperfocus during academic activities. Academic achievement was measured by objective information on students' grades at the end of the academic year.

## **Discussion**:

ADHD symptoms were positively correlated with the frequency of hyperfocus and negatively correlated with academic achievement, while hyperfocus was positively correlated to academic achievement. A significant indirect effect indicated that the higher severity of ADHD symptoms was associated with more frequent hyperfocus in academic activities which in turn was associated with higher grades.

## **Conclusion**:

In first-year university students, hyperfocus in academic activities significantly reduced the negative impact of ADHD symptoms on academic achievement in university students. Hyperfocus may help compensate to some extent for the academic difficulties associated with ADHD. Future studies should elucidate the conditions that promote hyperfocus during academic activities in university students with and without ADHD.


## **Do you have any conflicts of interest?**

No

**P-21-014**

**Work performance assessment in adults with ADHD and related disorders | ID #258**

Abstract Submitter: Nana Guo

Co-Authors: Anselm Fuermaier, Christin Steggemann, Oliver Tucha, Anita Keller

**Object**:

Work performance is a critical aspect of daily living, significantly impacted by attention-deficit/hyperactivity disorder (ADHD). However, current research lacks sophisticated, theoretically, and empirically supported instruments for assessing work performance in this context. This study aimed to develop a comprehensive and psychometrically sound self-report instrument for assessing the work performance of adults with ADHD and related disorders.

**Method**:

An initial set of 40 work performance items was developed based on a multifactorial model, various preexisting questionnaires, and input from an interdisciplinary working group. Extensive psychometric analyses were conducted on a community sample of 714 participants engaged in paid work for at least nine hours a week, randomly split into two subsamples.

**Discussion**:

Confirmatory factor analyses (CFA) validated the 7-factor structure of the work performance scale. The initial 40 items were reduced to 30 based on internal consistency and redundancy. The final set was assessed for internal consistency, and item-rest correlation. Associations of work performance were further analyzed with work characteristics, ADHD symptom severity, functional impairments, cognitive functioning, and general pathology.

**Conclusion**:

The 30-item work performance scale was developed based on empirically informed models, clinical considerations, and robust psychometric foundations. Subsequent clinical application is necessary to demonstrate its utility in clinical practice.

**Do you have any conflicts of interest?**

No

**P-21-015**

**Development of a psychological health promotion intervention for ultra-orthodox Jewish mothers of children with ADHD using the intervention mapping protocol | ID #8**

Abstract Submitter: Jennifer Budman

Co-Authors: Adina Maeir

**Object**:

ADHD, a common neurodevelopmental disorder in children and teens, can disrupt family dynamics, especially for mothers. In the Ultra-Orthodox Jewish (UOJ) community, these mothers face unique challenges due to cultural factors like stigma and limited access to public mental health services. This study aimed to create a culturally appropriate psychological health promotion intervention for UOJ mothers using the Intervention Mapping protocol.

**Method**:

A mixed-methods approach was used, involving qualitative content analysis from four focus groups (n=25) and descriptive statistics, including the content validity index, to assess the intervention's relevance, effectiveness, and cultural fit. Development integrated behavior change theories, like the COM-B system from the Behavior Change Wheel and the Theoretical Domains Framework, with ADHD literature for both general and UOJ populations.

**Discussion**:

Key behavior change determinants shaped objectives to reduce ADHD stigma, increase knowledge, raise school resource awareness, boost advocacy skills, and support maternal self-care. Strategies included group sessions, health info, social support, re-attribution, active learning, goal setting, and identity-building. Mothers confirmed the intervention's relevance, effectiveness, and cultural fit (CVIavg = .86, .85, .87).

**Conclusion**:

Intervention Mapping facilitated the development of a culturally sensitive health promotion intervention for UOJ mothers of children with ADHD. Further research is needed to assess its feasibility and effectiveness.

**Do you have any conflicts of interest?**

No

**P-22-001**

**The impact of untreated ADHD on motor vehicle accidents | ID #370**

Abstract Submitter: Jim Potenziano

Co-Authors: Ann Childress

**Object**:

Many adults with Attention-Deficit/Hyperactivity Disorder (ADHD) have impaired neurocognitive functions, which compromise driving behavior, with major public health implications.

**Method**:

To determine the correlation between driving with untreated ADHD and motor vehicle accidents (MVAs), systematic literature review and meta-analysis of relevant published data was performed according to PRISMA guidelines. Comparison of accident rates associated with untreated ADHD to rates of well-known risk factors for MVAs is also presented. To the extent possible, the same methods were used for the well-known risk factors.

**Discussion**:

Four studies met review criteria for the primary meta-analysis, showing a 93% higher accident risk for drivers with untreated ADHD versus the general population (significant pooled OR, 95% CI, $p<0.001$). Risk factors showed: 85% higher odds for THC/cannabis users, 162% for sleepy drivers, and 53% for opioid/benzodiazepine users (all significant, $p<0.001$). Similar risks were noted for alcohol use, speeding, and texting while driving.

**Conclusion**:

This meta-analysis found significantly higher MVA rates among drivers with untreated ADHD compared to the general population, similar to risks from known factors. Raising awareness of this risk is crucial for prevention. Understanding the benefits of ADHD treatment on driving underscores the importance of adequate treatment for both individual and public health benefits.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Employee of Tris Pharma

**P-22-003**

**Stigma of ADHD and its impact on Hungarian adolescents and young adults | ID #469**

Abstract Submitter: Vajsz Kornel

Co-Authors: Laura Rita Paulina, Dorina Peto, Bettina Juhasz, Monika Miklosi

**Object**:

This study explores the connection between the stigma associated with Attention Deficit Hyperactivity Disorder (ADHD) and the presence of ADHD-related traits in Hungarian adolescents and young adults. It aims to examine how these traits manifest and how stigma influences their social, emotional, and psychological experiences, with potential implications for support and intervention strategies.

**Method**:

Data were collected using the MHC-SF (Mental Health Continuum Short Form), SWAN (Strengths and Weaknesses of ADHD Symptoms and Normal Behavior Scale), ASQ (ADHD Stigma Questionnaire), RIBS (Reported and Intended Behaviour Scale), and MAKS (Mental Health Knowledge Schedule). Pearson correlation analysis, multiple linear regression, and mediation analysis were used to examine the relationships between ADHD traits, stigma, and well-being.

**Discussion**:

ADHD inattention traits correlated moderately with MHC emotional ($r = 0.29$) and social well-being ($r = 0.27$, $p < 0.01$). Regression analysis showed SWAN-IA and MAKS significantly predicted emotional and social well-being ($ß = 0.228–0.245$, $p < 0.001$). No mediation effects were found. Direct effects were significant for psychological well-being, with SWAN-IA ($ß = 0.350$), MAKS ($ß = 0.127$), and ASQ-negative self-image ($ß = -0.159$, $p < 0.001$).

**Conclusion**:

These findings suggest that ADHD inattention traits and mental health knowledge (measured by MAKS) are significant predictors of emotional, social, and psychological well-being. The model explained 16.4% of the variance in psychological well-being, highlighting the importance of ADHD-related traits and mental health knowledge. No mediation effects were found, but direct relationships warrant further investigation.

**Do you have any conflicts of interest?**

No

**P-22-004**

**Exploring the lived experiences of adults with ADHD to inform the development of an adult-specific functional impairment assessment measure | ID #460**

Abstract Submitter: Sumeiyah Koya


## **Object**:

The study aimed to investigate lived experience accounts of functional impairment (FI) in adults with ADHD to inform the development of an adult-specific FI assessment scale. The scale is the first of its kind to be informed by lived experience. It is intended to support diagnosis, monitor treatment efficacy and improve the recognition of ADHD-related challenges; thus providing a means of quickly identifying an individual's primary support needs.

## **Method**:

Twenty adults aged 21-69 with ADHD participated in one online semi-structured interview, where they were asked about the impact of their ADHD across seven functional domains. Purposive sampling was employed to ensure a diverse sample, particularly the inclusion of underrepresented populations in existing literature. Interviews were analysed using thematic analysis. Members of key stakeholder groups were consulted at each stage of the study.

## **Discussion**:

Several themes emerged, including: financial burden, emotional burden, loss of opportunities, a pattern of incomplete endeavours, need for external structure, overcompensation, dynamic support needs, a constant feeling of "playing catch-up," and the camouflaging effect of autistic traits. Findings are discussed in the context of different functional domains.

## **Conclusion**:

This study provided novel insights into the often overlooked challenges experienced by adults with ADHD. Several areas of FI emerged that are not covered within existing measures. This highlights the value of lived-experience involvement, and demonstrates the need for a measure that is informed by lived experience, to ensure we are serving the needs of those most impacted. A first draft of this FI assessment scale is currently in development.


## **Do you have any conflicts of interest?**

No

**P-22-005**

**Oral health-related quality of life in adult patients with depression or ADHD | ID #307**

Abstract Submitter: Christian Makiol

Co-Authors: Stephan Gemp, Dirk Ziebolz, Rainer Haak, Nicole Mauche, Madlen Prase, Ezgi Dogan-Sander, Frauke Görges, Maria Strauß, Gerhard Schmalz

## **Object**:

The aim of this study was the evaluation of the oral health-related quality of life in patients with depression or attention-deficit/hyperactivity disorder (ADHD) in comparison with a group of mentally healthy individuals. Patients from the Department of Psychiatry and Psychotherapy, University of Leipzig, Germany, were recruited. A healthy comparison group (HC) was recruited from the Department of Cariology, Endodontology and Periodontology.

## **Method**:

The OHRQoL was assessed using the Oral Health Impact Profile G14 (OHIP G14). Furthermore, a questionnaire regarding oral hygiene behaviour was applied. A total of 141 patients with depression or ADHD (depression n = 94, ADHD n = 47) and 145 HC individuals with a balanced age and gender distribution were surveyed.

## **Discussion**:

OHIP G14 median scores were significantly higher in the overall psychiatric patient group compared to HC. This was also found for the four dimensions of OHIP G14. The OHIP G14 sum score of patients with depression and ADHD was comparable. A significant association among psychiatric patients between smoking, gum bleeding, professional tooth cleaning, oral health education, interdental cleaning, and elevated OHIP scores was found.

## **Conclusion**:

Patients with depression and adults with ADHD show a reduced OHRQoL. A contradictory association between oral hygiene/oral health behaviour and OHRQoL supports the hypothesis of a changed perception of oral conditions in patients with mental diseases. Interdisciplinary collaboration between psychiatric specialists and dentists should be fostered.

## **Do you have any conflicts of interest?**

No

**P-22-006**

**Overview of activities in Bolivia regarding neurodevelopmental disorders | ID #474**

Abstract Submitter: Zuleika Morillo de Nieto

Co-Authors: Zuleika Morillo, Natali Legeros

### **Object**:

To present an overview of the initiatives and activities conducted in Bolivia focused on neurodevelopmental disorders (NDDs1), highlighting efforts in education, early detection, and support programs for affected children and adolescents.

### **Method**:

Since 2017, initiatives with FLAPIA and the Bolivian Society of Psychiatry include 18 in-person and 36 virtual sessions to improve early NDD detection, especially ADHD. The "Adolescent Pathology Rotation" for pediatric residents is now mandatory, focusing on comorbid ADHD. The "Therapist Mothers" program trained over 60 mothers of children with autism and ADHD.

### **Discussion**:

The initiatives demonstrated positive outcomes, such as reduced school dropout rates in two public schools following targeted educational interventions. The "Therapist Mothers" program empowered families, improving the care of children with NDDs. However, challenges persist, particularly in sustaining research interest among professionals outside mental health specialties and limited involvement from governmental institutions.

### **Conclusion**:

Bolivia has made significant strides in addressing NDDs through collaborative educational, clinical, and research efforts. These activities highlight the importance of multidisciplinary approaches and international cooperation. Continued advocacy and integration of mental health into broader healthcare and educational systems remain crucial for long-term impact.

### **Do you have any conflicts of interest?**

No

**P-22-007**

**Repetitive transcranial magnetic stimulation for treating ADHD in a pediatric and young adult population: A case series report | ID #423**

Abstract Submitter: Zuleika Morillo de Nieto

Co-Authors: Rose Nina, Hanae Komatsu, Juana Paula Perez, Susana Abreu, Montserrat Nieto

**Object**:

Repetitive transcranial magnetic stimulation (rTMS) has been explored as a treatment for attention deficit hyperactivity disorder (ADHD), showing promising results. This study aims to describe the results of three clinical cases of various ages: a child and two young adults with ADHD and the treatment of rTMS at the Nina Clinical Neuroscience Institute in Santo Domingo, Dominican Republic and Servicio Medico Consultorios Enmanuel

**Method**:

This case study evaluated three ADHD patients (ages 7, 25, and 26) using neuropsychological tests before and after 20 rTMS sessions targeting the right dorsolateral prefrontal cortex. Outcomes were assessed based on improvements in hyperactivity, impulsivity, anxiety, and insomnia. Medication was then tracked for the child and one adult, while all three continued psychotherapy throughout treatment.

**Discussion**:

Significant improvements in hyperactivity, impulsivity, anxiety, and concentration were observed in all three patients after rTMS. The child showed reduced aggression and coprolalia, while both young adults experienced remission of ADHD symptoms, including better focus and reduced anxiety and insomnia, as measured by the Hamilton Depression and Anxiety Scales and the Adult ADHD Self-Report Scale (ASRS).

**Conclusion**:

rTMS is a promising option for the treatment of ADHD, especially in patients who do not respond to conventional therapies, but rTMS is not a definitive cure and its effectiveness may vary. However, further research is necessary to maximize its benefits and understand the mechanisms.

**Do you have any conflicts of interest?**

No

**P-22-008**

**Empowering parents in a quest to transform ADHD care: A strengths-based, multimodal intervention for the clinical setting | ID #410**

Abstract Submitter: Brooke McLaughlin

Co-Authors: Susanne Tanski

## **Object**:

~6.5 million children in the US have an ADHD diagnosis. Parents play an out-sized role in leading their child's care team and determining overall success and quality of life. However, parents of children with ADHD are often overwhelmed and unsure of best ways to ensure appropriate care. Though high-quality information on ADHD exists, the challenge is how to access it at the right time and in a readable, digestible, and actionable format.

## **Method**:

Four steps of design and development include: 1) literature review 2) parent/physician feedback 3) professional design 4) field testing. The Playbook was designed with input from parents, physicians, teachers, and professional designers. A mixed-methods acceptability and feasibility pilot study looked at parental response to the Playbook via survey questions.

## **Discussion**:

Design and development findings are displayed in graphic form with excerpts from the Playbook. The findings from the pilot study show overwhelming parental acceptance and likability for use of the ADHD Playbook.

## **Conclusion**:

Initial findings were overwhelmingly positive. Future research will be important to understand how the Playbook improves parental knowledge, self-efficacy, and overall engagement in their child's ADHD care as compared to controls. Continued study to understand how physicians use/like the Playbook in a practice setting is also critical and ongoing.

## **Do you have any conflicts of interest?**

No

**P-22-009**

**Augmenting group services for university students with ADHD: Implementation of walk-in therapy services at a large, urban, public university in the United States | ID #158**

Abstract Submitter: Michael Meinzer

Co-Authors: Alex Hernandez-Vallant, Nicole Zolli, Noah Robinson

**Object**:

Though evidenced based treatments for ADHD exist, they are rarely implemented within university settings. Further, when services are available, skills are not consistently practiced between sessions. Walk-in services offer the opportunity to practice skills with clinicians in between weekly sessions without straining university resources. We sought to evaluate the strengths and limitations of walk-in ADHD services in a university setting.

**Method**:

Students participated in a university-funded, cognitive-behavioral skills group for ADHD and were invited to also participate in walk-in therapy services. Students provided feedback on the strengths of the walk-in services and barriers to engagement. Reflective memos were completed after walk-in sessions by the group facilitator. Interviews and memos were subjected to qualitative thematic analysis.

**Discussion**:

The following themes emerged on the perceived benefits and uses of walk-in support hours: (1) peer-to-peer support (validation, accountability), (2) personalized support to implement newly learned skills, and (3) overcoming emotional barriers (e.g., avoidance). Further, the facilitator found the services easy to implement and students reported satisfaction with the walk-in hours. Students provided suggestions for expanding the clinical service.

**Conclusion**:

Given that ADHD is conceptualized as a disorder of performance (not knowledge), opportunities for students to practice skills with scaffolding from professionals may help to maximize treatment gains. Walk-in services appeared to increase students' capacity to build skills to cope with ADHD-symptoms and were scalable at a large university. More research is needed to identify ways to increase the accessibility of services for this population.

**Do you have any conflicts of interest?**

No

**P-22-010**

**Subjective sleep characteristics and their association with attentional parameters in adults with ADHD | ID #369**

Abstract Submitter: Solveig Menrad

Co-Authors: Erika Künstler, Torsten Schultze, Heiko Schneider, Peter Bublak, Kathrin Finke, Sven Rupprecht

### **Object**:

In addition to attentional deficits, adults with ADHD report poorer sleep quality than healthy adults. Poor sleep quality can profoundly affect cognitive functioning, prompting questions about its association with attentional deficits in adults with ADHD. Our study aimed at 1) assessing differences in subjective sleep measures between adults with and without ADHD, and 2) at investigating their relationship with objective attention parameters.

### **Method**:

We examined 39 unmedicated adults with ADHD and an age- and gender-matched control group (n=39). Subjective sleep parameters were evaluated using questionnaires. Attentional measures were obtained through the whole-report paradigm based on Theory of Visual Attention, enabling an estimation of visual short-term memory capacity (vSTM) K. Linear regression models were used to determine the influence of sleep quality and efficiency on vSTM K in ADHD.

### **Discussion**:

Adults with ADHD reported significantly poorer sleep quality and efficiency, shorter sleep duration, longer sleep latency, more insomnia symptoms, and increased daytime sleepiness compared to controls. Regression models revealed sleep quality and ADHD status as significant predictors of vSTM K, while their interaction was not significant. However, both sleep efficiency and ADHD status as well as their interaction significantly predicted vSTM K.

### **Conclusion**:

Subjective sleep quality is impaired in adults with ADHD and might contribute to attentional deficits irrespective of the underlying disorder. Considering the association of sleep efficiency and vSTM K in ADHD, treatment of sleep problems alongside standard psychostimulant therapy should be considered to enhance attentional functioning in adults with ADHD.

### **Do you have any conflicts of interest?**

No

I do not have a conflict of interest.

**P-22-011**

**The long-term effects of cognitive behavioral therapy on quality of life in adults with ADHD after intervention: 6 to 8 years follow-up | ID #312**

Abstract Submitter: Valentina Navarro-Ovando

Co-Authors: Ravian Wettstein, Victoria Jancke, Sterre Van Schie, Jop Rijksbaron, Glenn Dumont

**Object**:

This study investigated the long-term effects (4 to 8 years) of pharmacotherapy and psychoeducation, with or without Cognitive Behavioral Therapy (CBT), on Quality of Life (QoL) in adults with ADHD. We hypothesized that participants receiving CBT would sustain treatment gains more effectively, reflected in higher QoL scores at follow-up or a slower decline compared to psychoeducation alone.

**Method**:

A follow-up of 627 participants from a prior cohort assessed the impact of ADHD treatments. All received pharmacotherapy and psychoeducation; some opted for 5–16 CBT sessions targeting ADHD-related impairments. Surveys measured adherence, QoL, ADHD severity, self-esteem, and self-efficacy. Linear mixed-effects models analyzed treatment effects over time, and regression identified predictors of clinically significant QoL improvements.

**Discussion**:

159 participants completed the survey. No group differences in QoL were found, except in the Mental Health domain, where psychoeducation scored higher. QoL scores improved post-treatment but declined at follow-up, remaining above baseline. Changes weren't linked to treatment type. Longer follow-ups correlated with lower QoL, while higher self-efficacy, lower ADHD symptoms, and employment predicted better QoL.

**Conclusion**:

Results replicate previous findings, showing no additive effect of CBT on QoL in the short or long term, except in the Mental Health domain. QoL declined after treatment discharge regardless of treatment type or medication adherence, emphasizing the need for sustained interventions to maintain improvements.

**Do you have any conflicts of interest?**

No

**P-22-012**

**The Impact of ADHD on sexuality: Relationships, sexual dysfunctions and compulsive sexual behavior | ID #448**

Abstract Submitter: Ricardo Nogueira

**Object**:

Narrative review of the literature on the relationship between attention deficit hyperactivity disorder (ADHD) and its impact on sexuality, focusing on three main points: relationships, sexual dysfunctions and compulsive sexual behavior disorder (CSBD).

**Method**:

Search in PubMed using key terms: "ADHD" and "sexual disorders"; "compulsive sexual behavior"; "porn"; "relationships".

**Discussion**:

ADHD impacts relationships due to instability, communication issues, and sexual difficulties, often leading to short-term partnerships. This population has higher prevalence of SD (39% men,43% women), particularly desire and orgasm disorders, and CSBD, including hypersexuality and problematic pornography use. These comorbidities, which impact individuals mental and sexual health, can be partially explained by ADHD symptomatology and neurobiology.

**Conclusion**:

ADHD significantly impacts sexuality, requiring tailored interventions. Addressing impulsivity, improving emotional regulation, and treating comorbid conditions can enhance relational stability and sexual health, improving overall quality of life. It is essential to openly discuss and address sexual health in ADHD care, reducing stigma and promoting holistic well-being.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I was invited to your congress by a pharmaceutical industry company (Bial).

**P-22-013**

**Life satisfaction in adults with ADHD: The role of age, gender and ADHD symptom severity | ID #237**

Abstract Submitter: Lisa Østrådt-Jennings

Co-Authors: André Høberg, Amalie Austgulen, Jan Haavik, Astri J. Lundervold

**Object**:

Life satisfaction, a key indicator of well-being, is understudied in adults with ADHD. This study compared life satisfaction in Norwegian adults with ADHD and controls, examining symptom severity, age, and gender. We hypothesized that: 1) Adults with ADHD would show lower life satisfaction than controls, particularly in younger adults and women; 2) Symptom severity would correlate negatively with life satisfaction, with stronger effects in women.

**Method**:

In this cross-sectional study, 600 participants (273 adults with a formal ADHD diagnosis, 327 controls), aged between 28 to 76 years from the project "ADHD in Norwegian Adults: From clinical characterization to molecular mechanisms" (ANA) completed the Satisfaction with Life Scale (SWLS) and the Adult ADHD Self-Report Scale (ASRS). Group differences and associations were explored and visualized using SPSS and R.

**Discussion**:

Adults with ADHD showed reduced life satisfaction compared to controls, with lower satisfaction among older adults across both genders. Life satisfaction (SWLS) demonstrated a negative correlation with ADHD symptom severity (ASRS), with this relationship being particularly pronounced in middle-aged and older adults with ADHD.

**Conclusion**:

While adults with ADHD exhibit lower life satisfaction, its correlation with symptom severity was weak. Reduced life satisfaction in older age groups may suggest a cumulative developmental impact of ADHD. These findings emphasize the need for longitudinal studies to understand life satisfaction across the ADHD lifespan, with the goal to identify the impact from diverse psychosocial factors and create more targeted, effective intervention methods.

**Do you have any conflicts of interest?**

No

**P-22-014**

**Maternal experiences of parenting boys with ADHD: The role of cultural context | ID #380**

Abstract Submitter: Dafna Palti

Co-Authors: Malka Hoffman

**Object**:

This study examined Maternal Sense of Competence (MSoC) among mothers of boys with ADHD in three Jewish religiosity groups in Israel (Secular, Religious, and Ultra-Orthodox). It aimed to explore how cultural norms and child-specific traits shape maternal experiences, providing insight into the influence of cultural and societal contexts on parenting children with ADHD.

**Method**:

The study included 44 boys aged 10–15 with ADHD symptoms (diagnosed or undiagnosed) and their mothers. Measures used were the ADHD Rating Scale-5 (symptom severity, reported by mothers), the Maternal Sense of Competence Scale (MSoC), and the General Self-Efficacy Scale (GSE, reported by children).

**Discussion**:

Results showed no significant differences in MSoC across religiosity groups. However, ADHD symptom severity negatively impacted MSoC. Religious affiliation and GSE moderated this relationship, with religious mothers showing stronger negative correlations and higher GSE intensifying the negative association—a surprising finding that requires further investigation.

**Conclusion**:

The study highlights the impact of cultural context on maternal experiences when parenting children with ADHD. Religious mothers may face heightened sensitivity to ADHD challenges due to dual expectations. Additionally, GSE moderated the ADHD-MSoC relationship, while higher GSE unexpectedly intensifying the negative association. These findings emphasize the need for culturally tailored interventions to support both children and mothers.

**Do you have any conflicts of interest?**

No

**P-22-015**

**Cognitive flexibility, empathy and social self-efficacy in children with ADHD and their parents: An actor-partner interdependence model | ID #167**

Abstract Submitter: Kaiqi Peng

Co-Authors: Weizhen Yin, Danping Hong, Jiayue Xie, Meng Yu

**Object**:

Children with ADHD typically exhibit impaired social self-efficacy. The bioecological systems theory underscores the reciprocal interplay of parental and child individual attributes on their mutual development. This study employs an actor-partner interdependence model to investigate the impact of cognitive flexibility in ADHD children and their parents on the social self-efficacy of both parties, as well as the mediating role of their empathy.

**Method**:

A total of 59 families with ADHD children and their parents were recruited. To isolate the influence of ADHD symptom, a control group of 50 families with typically developing (TD) children and their parents was incorporated. Cognitive flexibility, empathy, and social self-efficacy were measured separately for both children and parents. Bayesian estimation was employed to analyze the dyadic data.

**Discussion**:

The study reveals that both the cognitive flexibility of ADHD children and their parents can positively predict their respective social self-efficacy. The empathy in ADHD children mediates the relationship between their own cognitive flexibility and social self-efficacy. The negative correlation between parental empathy and both parents' and children's social self-efficacy is noteworthy, suggesting that hyper-empathy can sometimes be a burden.

**Conclusion**:

The cognitive flexibility of children with ADHD and their parents have been validated as pivotal factors in enhancing the social self-efficacy of both parties, whereas their empathy exhibits diverging effects in interpersonal interactions. The findings corroborate the mediating role of empathy and its clinical implications, indicating that social deficiency could be attenuated by enhancing empathy through cultivating social-cognitive skills.

**Do you have any conflicts of interest?**

No

**P-22-016**

**The role of psychological strengths in quality of life, wellbeing, and mental health in adults with ADHD | ID #143**

Abstract Submitter: Luca Hargitai

Co-Authors: Emma Laan, Lessa Schippers, Lucy Livingston, Graeme Fairchild, Punit Shah, Martine Hoogman

**Object**:

Strengths-based approaches are increasingly common in neurodevelopmental research but relatively little is known about the positive aspects of attention deficit hyperactivity disorder (ADHD). How much people with ADHD recognise and use their personal strengths, and whether these impact life outcomes, is also unknown. To address these research gaps, we conducted the first study of self-reported strengths, strengths knowledge and strengths use.

**Method**:

Adults with (n=200) and without (n=200) ADHD were recruited online. Participants rated their endorsement of 25 putative ADHD strengths and completed self-report measures of strengths knowledge, strengths use, subjective wellbeing, quality of life, and mental health. Using both Frequentist and Bayesian methods, we compared the ADHD and non-ADHD groups and explored the associations of strengths knowledge and use with outcomes across both groups.

**Discussion**:

The ADHD group endorsed 10 strengths more strongly than the non-ADHD group, including hyperfocus, humour and creativity, but reported similar endorsement for 14 of the strengths. Adults with and without ADHD did not differ on their strengths knowledge and use but, in both groups, increased strengths knowledge and, to some extent, greater strengths use were associated with better wellbeing and quality of life, and fewer mental health symptoms.

**Conclusion**:

We conclude that, while adults with ADHD may have both similarities and differences in strengths compared to their neurotypical peers, interventions that focus on enhancing people's strength knowledge and promoting the use of their personal strengths in their everyday lives could have universal applications to improve wellbeing in adulthood.

**Do you have any conflicts of interest?**

No

**P-22-017**

**The ADMiRE ADHD app: A digital platform to support measurement-based care for children and adolescents with ADHD | ID #244**

Abstract Submitter: Jane McGrath

Co-Authors: Sarah Sexton, Thomas David Coleman, Matthew Shipsey, Olateju Mafe, Niamh Sneyd, Carol Mccann, Robert Whelan, Tomas Ward, Des O'Toole, Brendan Doody

## **Object**:

ADMiRE, the first public-healthcare specialist ADHD service for children in Ireland, has developed a standardised, evidence-based protocol for ADHD, strongly focused on measurement-based care(McGrath, 2024). Clinician and service-user satisfaction is high but the paper-based processes are time-consuming and open to error. The project aim was to develop a secure web-based system for efficient, effective and safe assessment and management of ADHD.

## **Method**:

Key stakeholders (e.g. clinicians, service-users, educators) attended a series of national Design Thinking workshops between October 2022 and October 2023. Workshop outcomes guided the requirements of the web-based system. Detailed software specifications were established and a prototype online system has been developed. Measures of efficiency, effectiveness and safety will be compared pre- and post-implementation of the ADMiRE ADHD app.

## **Discussion**:

Key app features include 1. Referral management system (facilitates efficient referral triage/screening), 2. ADHD assessment tool, 3. ADHD follow up system with graphical representations of ADHD severity/physical health parameters over time (linked to medication), 4. Automatic generation of GP updates, prescriptions and case summary updates, 5. Patient portal, with facility for online questionnaire reporting and a psychoeducational component.

## **Conclusion**:

The ADMiRE ADHD app is a novel web-based system that is flexible, customisable and highly scalable. It can be used as an adjunct to existing Electronic Health Record systems or as a standalone system, and can be expanded for use in adult ADHD. The system will improve efficiency, effectiveness and safety in assessment and management of ADHD, and it encourages and facilitates clinicians to adopt an evidenced, measurement-based care approach.

## **Do you have any conflicts of interest?**

No

**P-23-001**

**“A bit lost" - living with ADHD in the transition between adolescence and adulthood: An exploratory qualitative study | ID #337**

Abstract Submitter: Inger Lise Rasmussen

Co-Authors: Kristin B. Ørjasæter, Jorun Schei

**Object**:

ADHD begins in childhood and often persists into adulthood. The transition from adolescence to adulthood is a vulnerable time and can be associated with comorbid conditions and unfavorable outcomes. Further studies are needed to explore the characteristics of the transition period in emerging adulthood. The aim of this study was to gain increased knowledge of emerging adults’ experience of living with ADHD in transition to adulthood.

**Method**:

The study has an explorative qualitative study. Seven participants were included. During 2022 we conducted in-depth interviews. We used Malterud’s systematic text condensation (STC) to analyze the data. Four themes were identified: (1) low level of knowledge about ADHD and treatment options; (2) barriers to seeking and accessing help; (3) developing self-help strategies; and (4) a preference to discontinued medication use.

**Discussion**:

Participants in this study often hesitated to seek out help during emerging adulthood. However, they expressed a need for an alternative way of thinking about interventions. Our study underlines that emerging adults living with ADHD may be particularly vulnerable during transitional phase; however, they want to live meaningful lives, and we argue that psychosocial interventions can promote the well-being and recovery of emerging adults with ADHD

**Conclusion**:

The participants emphasized a need for more information about ADHD in transition phases and support, both from professionals and peers, about finding ways to live meaningful lives. The treatment they had been offered was particularly linked to symptom reduction and medication use. A more appropriate focus would have been linked to how they, as citizens, could gain knowledge and skills to live meaningful lives with ADHD.

**Do you have any conflicts of interest?**

No

**P-23-002**

**School readiness among young children with ADHD: The role of neighborhood factors | ID #37**

Abstract Submitter: Leanett Reinoso

Co-Authors: Madeline Curzon, Melissa Hernandez, Margaret Johansson, Eva Goldhagen, Anthony Dick, Paulo Graziano

**Object**:

Neighborhood factors significantly influence children's school readiness. However, less is understood about the underlying mechanisms of this relationship, particularly for children with attention-deficit/hyperactivity disorder (ADHD) and from Hispanic backgrounds. This study explores the impact of neighborhood opportunity levels on school readiness among a predominantly Hispanic sample of children, both with ADHD and typically developing (TD).

**Method**:

Our sample included 323 children (Mage=5.50; male 69%; Hispanic=81%), with ADHD and TD. We used the Child Opportunity Index (COI) to assess neighborhood factors. School readiness was measured via the Woodcock-Johnson Test of Achievement (WJ-IV) and the Kindergarten Behavior and Academic Competency Scale (KBACS), and executive functioning via the Behavior Rating Inventory of Executive Function (BRIEF) and the Head-Toes-Knees Shoulders (HTKS) task.

**Discussion**:

ANOVAs indicated that children with ADHD had worse academic and EF outcomes compared to TD children (d=.58-2.05). Linear regression models revealed that COI significantly predicted academic outcomes on WJ Math, teacher-reported KBACS Math, and EF on parent-reported BRIEF, and HTKS task (B=.08-.18, p=<.001-.049). However, there were no significant interactions between COI and ADHD status or child ethnicity in predicting school readiness outcomes.

**Conclusion**:

Consistent with prior work, young children with ADHD have significant impairments across school readiness outcomes. Neighborhood resources and conditions appear to impact school readiness at similar levels, regardless of ADHD status or ethnicity.

**Do you have any conflicts of interest?**

No

**P-23-003**

**Assessing impact of chronic stress and premorbid traits on family caregivers of children with ADHD: A comparative study | ID #326**

Abstract Submitter: Carolina Remedi

Co-Authors: Rocìo Soria

## **Object**:

This study explored, through specific scales, the influence of preexisting factors on the physiological cost of chronic stress experienced by caregivers of children with ADHD compared to caregivers of normally developing children. Personality traits, perceived stress, caregiver burden, and state-trait anxiety were evaluated in search of measurable and treatable predictors that could mitigate allostatic load and its harmful effects.

## **Method**:

Comparative, observational, and non-interventional study. 34 caregivers of children with ADHD , and 36 caregivers of non ADHD children were recruited. Instruments used, Reduced NEO-FFI Scale for personality dimensions, Zarit Caregiver Burden Interview, Perceived Stress Scale, and STAI State-Trait Anxiety Inventory (STAI). Data analysis was conducted using SPSS software.

## **Discussion**:

Caregivers of ADHD children yield higher rates of neuroticism, recent perceived stress, and burden scores, reporting a greater risk of anxiety, depression and fatigue.. Parents not exposed to ADHD children, showed better copping approaches and problem solving skills.

## **Conclusion**:

Assessing premorbid vulnerability to chronic stress through standarized tools can aid in identifying caregivers at heightened risk of allostatic load. This should promote proactive prevention, early identification, management of risk factors, and the enhancement of coping mechanisms.

## **Do you have any conflicts of interest?**

No

**P-23-004**

**Assessing the relationship between sleep quality and ADHD severity in children and adolescents in Ireland | ID #379**

Abstract Submitter: Sharon Ryan

Co-Authors: Sonita Sharma, Jane Mcgrath, Matthew Shipsey

### **Object**:

The aim of this study is to assess the relationship between sleep quality and ADHD severity in a paediatric population attending a specialised ADHD treatment service, and to determine if sleep quality is significantly impacting the quality of life in patients with ADHD.

### **Method**:

The study was a retrospective study of patients who attended the ADMiRE ADHD service, for assessment in 2022. Patient questionnaires and rating scales were completed as part of the assessment process. Data was adjusted to account for deprivation. Sleep quality was assessed using the Children's Sleep Habits Questionnaire. ADHD severity was measured using Connors Questionnaires, ADHD Rating Scales and Qb test.

### **Discussion**:

In total, 117 patients were included in the study. Of these, 100 patients met the criteria for ADHD. Demographic deprivation data allowed adjustment against quality of life. Those with elevated Total CSHQ scores were more likely to have received a diagnosis of ADHD than those without. Elevated Parents or Teachers Connors questionnaires did not predict poorer sleep. Elevated hyperactivity scores on Qb test was associated with higher CSHQ scores.

### **Conclusion**:

Poor sleep will have a significant impact on a patient's quality of life, and will also compound ADHD related difficulties with attention and focus. Sleep difficulties in children are also likely to cause an element of carer's burden on parents. Careful assessment of sleep difficulties is an essential part of assessing and managing ADHD in clinical services.

### **Do you have any conflicts of interest?**

No

na

**P-23-005**

**Comparing character strengths in people with and without ADHD: A multi-informant case-control study | ID #140**

Abstract Submitter: Lessa Schippers

Co-Authors: Martine Hoogman, Corina Greven

**Object**:

ADHD is often described from a deficit-oriented view. Previous research found that people with ADHD experience strengths related to ADHD. It is unknown if strengths are more often experienced by people with ADHD than by people without ADHD, and how peers see these strengths. We aimed to compare strengths of people with and without ADHD, self- and peer-reported. Exploratively, we investigated congruence between peer- and self-reported strengths.

**Method**:

In this multi-informant case-control study we include 200 adults with ADHD and 200 adults without ADHD between 18-60 years old. Participants filled out a questionnaire about their strengths. Two peers, namely a partner or friend, and a colleague, filled in a questionnaire about the participants. We analysed differences between strengths of people with and without ADHD and calculated the congruence between self- and peer-reported strengths.

**Discussion**:

According to both self- and peer-report, people with ADHD scored significantly higher on, for example, hyperfocus and creativity. For other strengths, they scored significantly lower than people with ADHD, for example on perseverance. There were also strengths that did not show any differences between people with and without ADHD, such as cognitive flexibility and love. Overall agreement between self- and peer-report was moderate to poor.

**Conclusion**:

People with ADHD score higher on several strengths than people without ADHD. Agreement between participants and their peers on strengths was low, for both the ADHD and the control group. This might be improved with interventions aimed at recognizing and appreciating each other's strengths. By integrating our findings in the clinic and society, we hope to optimize psychoeducation, lower stigma, and improve well-being for people with ADHD.

**Do you have any conflicts of interest?**

No

**P-23-006**

**Mind the gap! Sleep and ADHD - exploring clinician training needs: A qualitative analysis | ID #86**

Abstract Submitter: Lucy Smith

Co-Authors: Catherine Hill, Samuele Cortese, Kate Greenwell, David Daley

### **Object**:

This study invited sleep and/or ADHD specialist clinicians to explore their knowledge, understanding, identification and management of sleep problems in children with ADHD with the aim of co-producing content for a digital sleep awareness training interventions for clinicians who work with children with ADHD.

### **Method**:

15 clinicians who work with children with ADHD and sleep difficulties were recruited from clinics via a gate keeper to take part in semi-structured qualitative interviews. Data was then analysed using a reflexive thematic analysis approach to identify themes that can be addressed in the digital sleep awareness training.

### **Discussion**:

4 themes were developed. 'It's a Problem' highlighted the extent children with ADHD struggle with sleep difficulties. Clinicians discussed the difficulty in finding evidence backed information they could share with caregivers, most of the advice they gave came from 'learning on the job'. Clinicians reflected on their 'insight into limitations of knowledge'. 'Learning for practice' highlighted the divergence and convergence in methods of learning.

### **Conclusion**:

There are significant implications for families dealing with sleep specific difficulties in children with ADHD that clinicians aim to support despite a lack of formal training on this. Clinicians are in urgent need of flexible online training that is free and available for all who work with children with ADHD.

### **Do you have any conflicts of interest?**

No

**P-23-007**

**ADHD and sexuality: Exploring the relationship between adult ADHD and risky sexual behavior | ID #188**

Abstract Submitter: Linda Sroka

Co-Authors: Laura Biedermann, Wolfgang Retz, Daniel Turner

### **Object**:

The present study aimed to investigate the association between Attention Deficit Hyperactivity Disorder (ADHD) and risky sexual behaviors, in adults. The hypothesis tested was that individuals with ADHD would exhibit higher levels of risky sexual behaviors compared to healthy controls.

### **Method**:

The study included adults diagnosed with ADHD and a matched control group without ADHD. Participants were assessed using various self-report questionnaires measuring different aspects of sexual fantasies and behaviors. Additionally, sexual reward delay was measured using the Sexual Delay Discounting Task (SDDT). Group differences were analyzed using non-parametric statistical methods.

### **Discussion**:

Preliminary results indicated that individuals with ADHD did not show significantly higher levels of paraphilias compared to controls, although there were differences in specific types of paraphilic fantasies (masochistic). Furthermore, individuals with ADHD showed higher levels of hypersexual behaviors and exhibited a reduced delay in sexual reward, particularly when conditions related to sexually transmitted infection risk were considered.

### **Conclusion**:

The findings reflect the inherent heterogeneity in sexual behavior research within ADHD populations. While statistical significance was not consistently achieved across all comparisons, the results suggest a notable trend toward an increased prevalence of specific paraphilic fantasies, hypersexuality, and risky sexual behaviors in adults with ADHD. These preliminary indications provide valuable insights for clinical practice.

### **Do you have any conflicts of interest?**

No

**P-23-008**

**Associations between eating behaviors, meal planning skills, and quality of life among adults with ADHD | ID #7**

Abstract Submitter: Adi Stern

Co-Authors: Kineret Sharfi

### **Object**:

1) Examine the differences in eating behaviors and meal planning skills between adults with and without ADHD; (2) Investigate the relationships between eating behaviors, meal planning skills and quality of life (QoL) in adults with ADHD.

### **Method**:

Cross-sectional quantitative study using an online anonymous survey with approximately 50 participants per group. The survey includes a demographic questionnaire, questionnaires on eating behaviors, meal planning skills and QoL. T-tests and MANOVA will examine group differences, and Pearson/Spearman tests will assess associations between variables.

### **Discussion**:

Data collection is currently underway, and full findings will be presented at the conference.

### **Conclusion**:

It is important to obtain a deeper insight into food choices, eating behaviors and meal planning practices and barriers. A better understanding may lead to practical implications for efficient interventions that provide support for an improved lifestyle and QoL.

### **Do you have any conflicts of interest?**

No

**P-23-009**

**Diagnosis identity perception of adolescents with ADHD and its relationship to quality of life | ID #23**

Abstract Submitter: Adi Stern

Co-Authors: Liron Lamash

### **Object**:

Identity formation, one of the key tasks of adolescence, can be particularly challenging for individuals with ADHD. Diagnosis identity is the way individuals incorporate a chronic condition into their sense of self. This perception plays a significant role in shaping behaviors, daily functioning, and quality of life (QoL). This study aimed to explore adolescents' ADHD identity perceptions and their relationships to symptoms severity and QoL.

### **Method**:

The study included 144 adolescents aged 11–18, diagnosed with ADHD. Participants completed demographic, ADHD symptom severity (ASRS), ADHD identity (IIQ: acceptance, rejection, enrichment, engulfment), and QoL (PedsQL: physical, emotional, social, school) questionnaires. Friedman and Wilcoxon tests were used to examine ADHD identity perceptions; Spearman correlations were used to assess relationships between ASRS, IIQ, and PedsQL.

### **Discussion**:

Significant difference was found between ADHD identity domains. Acceptance was significantly higher than rejection (Z=-4.82), enrichment (Z=-6.39), and engulfment (Z=-7.14). Significant correlations were found between engulfment, ADHD symptoms severity (r=.27) and physical, emotional, and school QoL (r=-.27; r=-.41; r=-.36). Social QoL was significantly correlated to acceptance, rejection, and engulfment (r=.26; r=-.43; r=-.37).

### **Conclusion**:

Acceptance emerged as the dominant ADHD identity domain, but negative perceptions like rejection and engulfment were also reported. This suggests that symptoms severity and poor QoL may foster negative identity perceptions, which in turn exacerbate symptoms and reduce well-being. These findings highlight the importance of addressing both symptoms management and identity perceptions to improve functioning and QoL in adolescents with ADHD.

### **Do you have any conflicts of interest?**

No

**P-23-010**

**ADHD and academic performance in adolescents | ID #247**

Abstract Submitter: Janeth Torres

Co-Authors: Iliana Sandoval, Esmeralda Matute, Yaira Chamorro

**Object**:

To characterize reading, writing, and mathematics abilities in adolescents with inattentive ADHD, combined presentation of ADHD, and adolescents without ADHD.

**Method**:

94 Mexican adolescents were included in our sample. Three groups were formed based on DSM-5 ADHD criteria: Inattentive-ADHD (n=31, mean age=14±0.9), Combined-ADHD (n=16, mean age=14.1±0.7), and controls (n=47, mean age=13.8±0.9). Different components of reading, writing, and mathematics were assessed by using the ENI-2 (Matute et al., 2013). Groups were compared using Kruskal-Wallis test and Benjamin-Hochberg correction.

**Discussion**:

ADHD-I and ADHD-C groups scored lower than Non-ADHD group in several measures. ADHD-I had lower scores in reading comprehension (H=6.28, p.BH=0.035) and reading speed (H=13.2, p.BH=0.00051). Both ADHD-I (H=11.77, p.BH=0.011) and ADHD-C (H=11.77, p.BH=0.011) had lower scores in written precision and mathematical computation (ADHD-I: H=11.44, p.BH=0.013; ADHD-C: H=11.44, p.BH=0.013).

**Conclusion**:

Our results suggest failures in writing and mathematics abilities in adolescents with ADHD-I and ADHD-C compared to controls. In addition, the ADHD-I group also presents a deficit in reading abilities.

**Do you have any conflicts of interest?**

No

**P-23-011**

**Eating disorders, ADHD, emotional dysregulation, and social functioning: A network analysis | ID #319**

Abstract Submitter: Maria C. Velez-Pastrana

Co-Authors: Angely K. González-Martell

**Object**:

Eating disorder (ED) and ADHD symptoms often co-occur, exacerbating outcomes. Emotional dysregulation (ER) may be a key link and impairs social emotional functioning. Despite prior research, their specific interrelations and influence on social functioning remain underexplored. We use network analysis to map associations between ED and ADHD symptoms, ER and social functioning, comparing their network structures in community vs clinical samples.

**Method**:

Community and clinical samples (ED/ other) of Puerto Rican adults (n=188) completed measures of ADHD and ED symptoms, ER and social functioning. We model the network structures of clinical and community samples, with nodes comprising ED and ADHD symptoms, ER and social functioning items, and compare them using a network comparison test (NCT). Data collection is underway, with 188 participants at present.

**Discussion**:

We identify clusters of symptoms and indicators of emotional dysregulation and social functioning, the pathways and patterns of associations among these, and present them graphically. Through invariance tests we assess for significant differences in the structure of symptom and indicator networks between the community and clinical samples.

**Conclusion**:

We discuss clinical and research implications for the assessment and treatment of adults with ED and ADHD. Findings may inform targeted interventions and clinical strategies for addressing these comorbidities in diverse populations.

**Do you have any conflicts of interest?**

No

**P-23-013**

**A pilot study exploring the experiences of pregnant women diagnosed with ADHD during vulnerability screenings in midwifery consultations | ID #190**

Abstract Submitter: Mette Winther

### **Object**:

A vulnerability screening was implemented for all pregnant women in Northern Denmark to detect vulnerable cases early. These cases include pregnant women diagnosed with ADHD, which research indicates require additional prenatal care. Theorists within critical psychology argue that these standardized screenings can overlook the individual's context and put them at risk of marginalization.

### **Method**:

This study investigates how women diagnosed with ADHD experience vulnerability screening and its effects on their self-understanding and agency. A qualitative design, framed by a literature study and critical psychology approach, underpins two interviews conducted 1 week and 6 months post-vulnerability screening in the 20th week of pregnancy (2024). The empirical data is thematized and analyzed using critical psychological analytical concepts.

### **Discussion**:

Informants felt empowered by their midwife but also judged and categorized. To resist marginalization, informants omit mentioning their own vulnerability and highlight external resources, such as education level. These limitations, combined with the resistance to being marginalized, might pose a risk that undermines the validity of vulnerability screening, preventing individuals from receiving the additional support.

### **Conclusion**:

This pilot study highlights the need for person-centered approaches in vulnerability detection and suggests that enhanced ADHD training for healthcare personnel might reduce marginalization and promote supportive care.

### **Do you have any conflicts of interest?**

No

**P-23-014**

**Exploring models of care to improve access to adult ADHD Care: Insights from an international Churchill Fellowship | ID #112**

Abstract Submitter: Wee-Sian Woon

**Object**:

Individuals in Australia face significant gaps in accessing adult ADHD diagnosis and management, with lengthy wait times and high costs highlighted in a recent government inquiry. Through a Churchill Fellowship, this study investigated models of care across Europe and the United States to identify strategies for how to make ADHD care more timely, equitable, and compassionate.

**Method**:

Over six weeks from May 2023, healthcare delivery models for adult ADHD were explored across Ireland, the United Kingdom, Sweden, and the United States through qualitative interviews with health planners, clinicians, individuals with lived experience, and organisations. Observations at clinics, attendance at two international conferences, and a review of literature including policy and clinical dimensions further informed the analysis.

**Discussion**:

Diverse ADHD care approaches include psychoeducation, community support, public systems, and multidisciplinary models. Key themes highlight patient-centred care, the neurodiversity paradigm, and integrating ADHD into primary care to meet rising demand. Telehealth and technology improve access, while practitioner training is essential. ADHD care must also extend beyond healthcare to address needs in workplaces, schools and the justice system.

**Conclusion**:

Stepped, individualised care models for ADHD that include psychoeducation, support organisations, and the neurodiversity paradigm are vital. A strong public system, integration into primary care, practitioner upskilling, and technology adoption are key to delivering equitable, timely, and compassionate care. This holistic approach seeks to enhance access, improve outcomes, and support the well-being of individuals with ADHD in Australia.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

Received financial support to complete Churchill Fellowship from Churchill Trust

**P-24-001**

**Mindful cycle: Interactive, hormone-sensitive therapy approaches for ADHD**

**| ID #149**

Abstract Submitter: Marie-Christin Atzor

Co-Authors: Niclas Braun, Victoria Schöffel, Alexandra Philipsen

**Object**:

Emotional dysregulation, a core symptom of ADHD, is often exacerbated in females by hormonal fluctuations (De Ronda et al., 2024; Eng et al., 2024). Females with predominantly inattentive ADHD are less likely to be treated due to societal expectations, symptom masking, and insufficient gender-specific diagnostics (Murniati et al., 2024). This study examines hormonal influences on ADHD symptoms and diagnostic challenges in females.

**Method**:

Data from wearables and integrated questionnaires on emotional dysregulation and quality of life will be collected at three time points: Pre-cycle (follicular phase), Mid-cycle (ovulatory phase), and Post-cycle (luteal phase). Participants, assigned to an ADHD or healthy control group, will be observed across three menstrual cycles. Results are analyzed using repeated measures ANOVAs across phases and groups.

**Discussion**:

This study aims to explore the interplay between ADHD symptoms and the menstrual cycle. Hormonal fluctuations may influence symptom patterns, highlighting the need for gender-sensitive diagnostic and therapeutic approaches.

**Conclusion**:

This study highlights the need to increase awareness of female ADHD to reduce underdiagnosis and improve treatment access. Personalized therapeutic approaches can be developed, incorporating cycle-specific adjustments to develop tailored interventions.

**Do you have any conflicts of interest?**

No

**P-24-002**

**Investigating factors that impact the age of ADHD diagnosis in young people, and sex differences | ID #214**

Abstract Submitter: Isabella Barclay

Co-Authors: Agnieszka Butwicka, Henrik Larsson, Paul Lichtenstein, Ann John, Kapil Sayal, Tamsin Ford, Mark J Taylor, Anita Thapar, Kate Langley, Joanna Martin

**Object**:

Attention Deficit Hyperactivity Disorder (ADHD) is a common neurodevelopmental condition characterised by inattentive and hyperactive/impulsive symptoms. Recognition does not always occur and can be delayed, especially in females. The study aims were to investigate factors that may be associated with ADHD recognition and timing, and their differences between sexes.

**Method**:

The Child and Adolescent Twin Study Sweden(n=30,521) data was used. Investigated factors were: ADHD family history, autism, intellectual disability, anxiety, or depression diagnosis, and psychiatric prescriptions; for the ADHD recognition(n=1,560,f=34.10%) timing comparison these were prior ADHD diagnosis; and for the recognised vs unrecognised(n=1076,f=32.99%) comparison when they occurred ever. Interaction analysis investigated sex differences.

**Discussion**:

Depression and anxiety, and antipsychotic, antidepressant and mood stabiliser prescriptions were associated with later ADHD diagnosis. Effect sizes ranged from 0.70(SE=0.22) to 1.65(SE=0.25). ADHD family history was associated with an earlier age, effect size -0.88(SE=0.29). All factors were more likely to occur in the recognised ADHD group compared to the unrecognised group, odds ratios ranged from 1.56(95%CI=1.05,2.33) to 5.80(95%CI=3.85,8.74).

**Conclusion**:

These findings suggest certain diagnoses, like anxiety and depression, and psychiatric prescriptions are linked to later ADHD recognition, but associated with ADHD recognition generally. This highlights the need to explore ADHD in young people when assessing and treating other difficulties, and be aware that ADHD can occur even without other comorbidities. Interaction analyses to explore sex differences are ongoing.

**Do you have any conflicts of interest?**

No

**P-24-003**

**Age-related cognitive and emotional impairments in ADHD: A double whammy for women | ID #350**

Abstract Submitter: Brandy Callahan

Co-Authors: Emma Climie, Hawra Al-Khaz'Aly, Simran Dhillon

### **Object**:

Older adults with ADHD are at risk of cognitive (Becker et al., 2023) and emotional difficulties (Michielsen et al., 2015). Women may be more disadvantaged than men due to hormonal influences on cognitive and emotional health (Hogervorst et al., 2022) which may compound the effects of ADHD as they age. We test the hypothesis that women with ADHD experience worse cognitive and emotional outcomes with increasing age, relative to men.

### **Method**:

Subjects were 102 adults aged 18-80 with clinical (84%) or subclinical (16%) ADHD. The Connors Adult ADHD Rating Scale, Patient Health Questionnaire, and General Anxiety Disorder Inventory measured ADHD and psychiatric symptoms. The Cognitive Failures Questionnaire (CFQ) and Barkley Deficits in Executive Functioning Scales (BDEFS) assessed cognitive failures. The Difficulties in Emotion Regulation Scale (DERS) tapped emotion dysregulation.

### **Discussion**:

ADHD severity decreased with age in men but not women (p=.002), and was correlated with all subscales of the CFQ (r=.64-.71), BDEFS (r=.33-.65) and DERS (r=.70). Age predicted greater cognitive complaints across all CFQ subscales and most BDEFS subscales (ps=.05). Women experienced worse distractibility (p=.015), self-restraint (p=.020) and self-regulation (p=.048) relative to men, after adjusting for psychiatric symptoms but not ADHD severity.

### **Conclusion**:

Women may experience greater age-related cognitive burden, due in part to ADHD symptoms that are more persistent than those experienced by men. Results support the need for a sex-specific lens when considering the lifespan impacts of ADHD, and point to women with ADHD as a potentially vulnerable group with regard to cognitive health.

### **Do you have any conflicts of interest?**

No

**P-24-004**

**Prevalence and clinical correlates of ADHD in individuals with gender dysphoria | ID #213**

Abstract Submitter: Chiara Cecchelli

Co-Authors: Corinna Moradei, Giacomo Grassi

**Object**:

There are growing data in the current literature regarding comorbidity between Gender Dysphoria (GD) and neurodevelopmental disorders such as autism spectrum disorders but data regarding comorbidity between Gender Dysphoria and Attention Deficit Hyperactivity Disorder (ADHD) are still scarce. The aim of the present study is to evaluate the prevalence of ADHD and its clinical correlates in a sample of adult patients with a primary diagnosis of GD

**Method**:

Eighty-one subjects diagnosed with Gender Dysphoria referred to our center were assessed using standardized self-report measures evaluating GD severity, mood and anxiety symptoms, and ADHD. GD patients with associated ADHD were compared to GD patients without ADHD regarding gender dysphoria symptoms, mood and anxiety symptoms, and functional impairment.

**Discussion**:

Results indicated a 33.3% prevalence of ADHD among GD patients. GD patients with ADHD reported significantly higher levels of mood ($p < .001$) and anxiety symptoms ($p < .001$) and greater psychosocial functional impairment ($p = .001$) compared to GD patients without ADHD. No significant differences were observed between groups in the severity of GD symptoms. No significant differences were observed between groups in the severity of GD symptoms.

**Conclusion**:

Findings indicate that adult GD patients show high prevalence of ADHD and appear to represent a more complex subpopulation of patients with heightened depressive and anxiety symptoms and increased functional impairment. These results underscore that the presence of ADHD is frequent and appears to exert an important clinical impact on patients with GD, then, ADHD should be routinely screened when facing GD patients.

**Do you have any conflicts of interest?**

No

**P-24-005**

**Assessment of the impact on work productivity in women with ADHD | ID #286**

Abstract Submitter: María Elvira Ferrer Vázquez

Co-Authors: Claudia Balado Alves, Ana Fátima Gómez Suárez

### **Object**:

ADHD affects work performance in adults, which may be due to difficulties in impulse control and inattention (Faraone et al., 2000). In recent years, the gender perspective is being taken into account in the detection and intervention in ADHD (Faheem et al., 2022). The study aimed to find out the impact that the symptoms associated with the disorder have on work productivity in a sample of 123 women between 26 and 55 years of age.

### **Method**:

The women's perception of the impact of the symptoms associated with ADHD on their work productivity was assessed using the WPAI:GH scale.

### **Discussion**:

The results indicate that women with ADHD consider that the symptoms associated with ADHD have a very significant impact on their work: they perceive a significant decrease in their productivity and lose many hours of their working day each week due to the symptomatology.

### **Conclusion**:

The impact of ADHD symptomatology in the workplace requires the implementation of measures and policies in the company to raise awareness and more inclusive work environments to improve the productivity of people with ADHD, especially women who feel they have to hide their symptoms more and work twice as hard as their colleagues to achieve work objectives.

### **Do you have any conflicts of interest?**

No

**P-24-006**

**Efficacy of a psychoeducation program in the reduction of emotional symptomatology and improvement of self-esteem in women with ADHD | ID #288**

Abstract Submitter: María Elvira Ferrer Vázquez

Co-Authors: Ana Fátima Gómez Suárez, Claudia Balado Alves

## **Object**:

The gender gap in prevalence of ADHD is lower in adults 1:1 (Kessler et al., 2006), which may be due to the impact of women's traditional role, in which their social skills are emphasized along with symptom compensation or attenuation (masking). The aim is to determine the impact on self-esteem of a psychoeducation program for adult women with ADHD taking into account the gender perspective.

## **Method**:

To analyze the scores of a self-elaborated questionnaire on the perception of self-esteem of women with ADHD before starting the program and after attending the psychoeducational intervention groups of the INGADA Foundation.

## **Discussion**:

The results of the questionnaires indicate that women perceive an improvement in their self-esteem and a less critical inner dialogue after their participation in the program.

## **Conclusion**:

The gender perspective should be taken into account when developing specific programs for adult women with ADHD

## **Do you have any conflicts of interest?**

No

**P-24-007**

**Perimenopausal symptoms in women with and without ADHD: A population-based, cross-sectional study | ID #294**

Abstract Submitter: Unnur Jakobsdottir Smari

Co-Authors: Unnur Anna Valdimarsdottir, Dora Wynchank, Maxime De Jong, Thor Aspelund, Arna Hauksdottir, Edda Bjork Thordardottir, Donghao Lu, Henrik Larsson, Sandra Kooij, Helga Zoega

**Object**:

To enhance the evidence base around ADHD and potential comorbidities in perimenopausal women. Specifically, to compare perimenopausal symptoms and co-occurring mental and physical health issues among women with and without ADHD.

**Method**:

Population: 6275 women from the Icelandic SAGA Cohort Study in Iceland.

Measures: Self-reported ADHD, perimenopausal symptoms (Menopause Rating Scale (MRS)).

Data analysis: We described differences in reported perimenopausal symptoms among women with and without ADHD, stratified the analyses by age-groups, and contrasted prevalence of severe perimenopausal symptoms by ADHD by calculating prevalence ratios (PR) using Poisson regression models.

**Discussion**:

Reported perimenopausal symptoms among women with ADHD were highest in age group 35-39, compared to age group 45-49 among women without ADHD. Women with ADHD had a higher prevalence of severe perimenopausal symptoms overall (54.9% vs. 30.3%, PR=1.81 (1.65-1.99)), and of severe psychological (59.3% vs. 36.2%, PR=1.64 (1.51-1.77)), somatic (30.7% vs. 13.8%, PR=2.22 (1.90-2.60)) and uro-genital symptoms (43.1% vs. 27.6%, PR=1.56 (1.39-1.76)).

**Conclusion**:

Our findings suggest that women with ADHD have an increased burden of severe perimenopausal symptoms and they may start to experience those symptoms from an earlier age, compared to women without ADHD. Clinicians need to be vigilant about ADHD diagnoses when treating perimenopausal women and keep in mind an onset of severe symptoms at an earlier age in this group.

**Do you have any conflicts of interest?**

No

**P-24-008**

**Gender differences in clinical and comorbid features of adults with ADHD | ID #406**

Abstract Submitter: Ali Kandeger

Co-Authors: Elif Yıldız, Hacer Söylemez, Ömer Bayirli, Bengi Semerci

**Object**:

This study aims to retrospectively evaluate gender differences in adult ADHD based on sociodemographic data, clinical features, and psychometric assessments.

**Method**:

Medical records of 358 adult patients diagnosed with ADHD at the Adult Neurodevelopmental Disorders Clinic of Selçuk University Faculty of Medicine, Department of Psychiatry, were reviewed. Data on demographics, clinical characteristics, and psychometric assessments were extracted, organized into a dataset, and analyzed statistically. The study was approved by the Local Ethics Committee of Selçuk University (decision number: 2024/424).

**Discussion**:

There were no significant differences in age or educational level between genders. Substance use (tobacco, alcohol, and others) was more common in males. Females had a higher prevalence of psychiatric comorbidities (74.9% vs. 61.7%) and generalized anxiety disorder. A history of suicide was more frequent in females. No gender differences were observed in self-reported ADHD, excessive mind wandering, anxiety, and depression scores.

**Conclusion**:

The results underscore the need for gender-sensitive approaches in the assessment and management of ADHD. Further research with larger samples and more comprehensive datasets is essential to validate and expand upon these findings.

**Do you have any conflicts of interest?**

No

**P-24-009**

**Mothers with ADHD: Guilt, shame, and the role of self-discrepancy | ID #58**

Abstract Submitter: Rebecca Keisar

Co-Authors: Ortal Slobodin

### **Object**:

The current study examined the relationship between ADHD symptoms and maternal guilt and shame, focusing on the mediating role of self-discrepancy (i.e., the gap between mothers' representations of the "actual" mother and the "ideal/ought mother") in this relationship.

### **Method**:

The study included 281 mothers of children aged 2-18 years (72 with ADHD diagnosis and 209 without). Participants completed an online questionnaire addressing ADHD diagnosis and symptoms, maternal shame and guilt, and self-discrepancy between their representations of the "actual" and "ideal" mother. Mediation analysis was conducted using SPSS Process Macro model 4 (Hayes, 2013). Mothers' co-morbidity and children's ADHD served as covariates.

### **Discussion**:

Increased levels of ADHD symptoms ($B = .019$, $SE = .004$, $p < .001$) and self-discrepancy ($B = .472$, $SE = .118$, $p < .001$) predicted maternal guilt. Moreover, the relationship between ADHD symptoms and maternal guilt was mediated by self-discrepancy ($B = .004$, $SE = .001$, $LLCI = .001$, $ULCI = .006$). Self-discrepancy levels also mediated the relationship between ADHD symptoms and maternal shame ($B = .003$, $SE = .001$, $LLCI = .001$, $ULCI = .005$).

### **Conclusion**:

ADHD-related difficulties in parenting may contribute to painful gaps between mothers' representations of the actual and ideal mother. This gap, in turn, predicts increased shame and guilt about their maternal functioning.

### **Do you have any conflicts of interest?**

No

**P-24-010**

**Understanding executive functioning in daily life: The impact of ADHD and gender on adolescents' self-awareness | ID #150**

Abstract Submitter: Nirit Levanon-Erez

Co-Authors: Orit Fisher, Adina Maeir

## **Object**:

Executive Functions(EF) and Self-awareness(SA) are metacognitive abilities that help regulate thoughts, emotions, and behaviours. Both, develop during adolescence, and often impaired in ADHD. SA of EF is a central factor in developing strategies to cope with the complexity of adolescent tasks and demands. This study examines EF profiles and SA of EF in daily life among male and female adolescents with and without ADHD

## **Method**:

This study included a total of 195 adolescents (12–18 y/o; 120 males, Mage=14.47, SD=1.63; 75 females, Mage=14.62, SD=1.69) diagnosed with ADHD (n=101, 51.7% male) or without ADHD (n=94, 48.3% male). Adolescents and their parents completed the Behavior Rating Inventory of EF (BRIEF). Two-way ANOVA examined group and gender effects on EF profiles. Three-way mixed ANOVA analyzed group, gender and reporter effects for SA.

## **Discussion**:

Parents of adolescents with ADHD reported higher EF challenges than controls ($p < .001$, $ES = .56$). Parents of males reported higher EF challenges than parents of females ($p = .01$, $ES = .03$). Male adolescents with ADHD underreported EF challenges compared to parents ($p < .001$, $ES = .1$). Controls aligned with parents, while non-ADHD females reported more EF challenges than parents but fewer than females with ADHD.

## **Conclusion**:

Considering the important role of EF and self-awareness of EF in adapting to the challenges of adolescence in general and adolescents with ADHD specifically, it is important to understand neurodevelopmental and gender factors that may contribute to better understanding for this population. These findings may help identify at-risk populations and inform interventions to enhance adaptive functioning among adolescents with ADHD.

## **Do you have any conflicts of interest?**

No

**P-24-011**

**Gender discrepancies in executive functioning among high-functioning individuals diagnosed with ADHD as adults | ID #238**

Abstract Submitter: Sofia Høgstad

Co-Authors: Marta M. Gorecka, Roald A. Øien

### **Object**:

Executive functioning difficulties, along with gender differences in cognitive profiles, are consistently reported in ADHD. However, gender-specific patterns remain underexplored in individuals diagnosed in adulthood. Understanding these differences is necessary for improving diagnostic practices and developing tailored interventions.

### **Method**:

The study included 30 unmedicated Norwegian-speaking adults (15 women, 15 men) diagnosed with ADHD in adulthood. They completed standardized tests of executive functions, including the Trail Making Test, Stroop Test, and Conners' Continuous Performance Test, 3rd Edition. Self-reported executive functioning in daily life was assessed using the Behavior Rating Inventory of Executive Function – Adult. Data were analyzed using MANOVAs.

### **Discussion**:

No significant gender differences were found in performance-based measures of executive functioning. However, self-reported data revealed that women experienced significantly greater difficulties in daily executive functioning. Specifically, women reported higher levels of dysfunction in inhibition (m/f M = 65,3/73,0), emotional control (m/f M = 58,2/68,5), working memory (m/f M = 74,2/83,1), and task monitoring (m/f M = 66,9/77,0).

### **Conclusion**:

Standardized tests may not capture real-world executive function challenges, especially among high-functioning adults. Women's greater self-awareness can widen the gap between objective performance and subjective experience. Conversely, en may underreport cognitive struggles due to social norms discouraging vulnerability, potentially masking deficits. Future research should integrate diverse measures when assessing executive functions in adults.

### **Do you have any conflicts of interest?**

No

**P-25-001**

**Sex differences in sustained attention and motor activity in adults with ADHD: Performance outcomes and preliminary latent profiles | ID #314**

Abstract Submitter: Valentina Navarro-Ovando

Co-Authors: Sterre Van Schie, Ravian Wettstein, Glenn Dumont

**Object**:

Previous research identified sex differences in the increase of motor activity during a continuous performance test (CPT) in adults with ADHD. This study aimed to further investigate these sex differences and explore latent profiles in sustained attention performance and motor activity using data from a CPT paired with a motion-tracking device among adults with ADHD.

**Method**:

Data from 13,302 adults with ADHD who completed a 20-minute QbTest were analyzed. CPT and motor activity parameters were collected for each 5-minute quarter and the full test. A two-way mixed ANOVA examined sex differences, with time as a within factor and sex as a between factor. Fisher's Z compared correlations. A preliminary latent class analysis (80% sample) included sex as a covariate to inform further test validation and refinement.

**Discussion**:

There was a main effect of sex with a small effect size in CPT parameters. Females presented higher RT, RTv, omission and commission error rate compared with males. Correlations between micro-events with RT and omission errors, were stronger in males. Preliminary results from LCA show a four-class model to be optimal based on fit statistics. Sex was significantly associated with class membership.

**Conclusion**:

Female with ADHD showed more inattentive and impulsive errors, as well as more inconsistent and slower responses than males. Males exhibit a more pronounced interaction between performance and motor activity. Results suggest that ADHD compensatory mechanisms differ by sex, particularly under increased cognitive demand with derive in different symptom presentation.

**Do you have any conflicts of interest?**

No

**P-25-002**

**iPad-based tool for assessing executive function and processing speed in adolescents with ADHD | ID #355**

Abstract Submitter: Katrine Marcussen

Co-Authors: Amalie Thea Jensen, Anja Friis Elliot, Trine Munk Olsen, Katrine Bang Madsen

### **Object**:

This feasibility study evaluates an online group counseling intervention program (AMOR) tailored for pregnant women and new mothers with Attention Deficit Hyperactivity Disorder (ADHD). AMOR aims to address the unique challenges faced by this group, including heightened ADHD symptoms due to hormonal changes, sleep disruption, and increased caregiving demands.

### **Method**:

A mixed-methods pre-post design includes 30 pregnant women with ADHD. Primary outcomes assess adherence, program credibility, and satisfaction (dropout rates, CSQ-8). Semi-structured interviews will explore participant experiences, analyzed via thematic analysis. Secondary outcomes include changes in ADHD symptoms, depression, anxiety, stress, and quality of life, measured through self-reported pre- and post-validated questionnaires.

### **Discussion**:

Data collection will commence in January 2025. Primary outcomes will be presented using means and standard deviations, while secondary outcomes will be analyzed using paired t-tests to compare pre- and post-questionnaire scores. We anticipate high adherence rates, driven by the program's accessible online format and strong participant interest.

### **Conclusion**:

This feasibility study will provide valuable insights into the potential for AMOR to support pregnant and new mothers with ADHD. Initial findings are expected to inform future large-scale trials and contribute to the development of tailored interventions for this underserved population.

### **Do you have any conflicts of interest?**

No

**P-25-003**

**Describing the first semester: Mental health, resource use, and functioning in college females with and without ADHD | ID #334**

Abstract Submitter: Haley McBride

Co-Authors: Kevin Antshel

## **Object**:

Very little prior research has focused on the experience of female college students, especially those in their very first semester. To fill this void, this project sought to describe the mental health, resource use, and functioning of first semester college females with ADHD compared to their female peers without ADHD and answer the question: Are challenges facing female college students with ADHD present at the very start of college?

## **Method**:

First semester undergraduate students (80 with ADHD, 1184 without ADHD) recruited from eight universities completed self-report measures regarding test anxiety, resource use (psychiatric medication, therapy, accommodation use) and functioning (family, school, life, self-concept, social, risk). Linear and logistic regression analyses considered group differences in test anxiety, resource use, and functioning.

## **Discussion**:

ADHD was positively associated with test anxiety ($\beta$=.14, t(1230)=4.9, p<.001, $R^2$=.02). ADHD was significantly associated with use of medication [$\chi^2$=142.55, p<.001 Nagelkerke (N) $R^2$=.28], therapy ($\chi^2$=16.87, p<.001, N $R^2$=.03) and accommodations ($\chi^2$=71.76, p<.001, N $R^2$=.15), and lower functioning in school ($\chi^2$=13.99, p<.001, N $R^2$=.02), life ($\chi^2$=20.49, p<.001, N $R^2$=.03) and self-concept ($\chi^2$=20.37, p<.001, N $R^2$=.02) with small to medium effect sizes.

## **Conclusion**:

In first semester college females, ADHD was associated with increased test anxiety and increased likelihood of using resources (e.g., therapy). Despite greater resource use, first semester college females with ADHD report poorer functioning in their very first semester and therefore appear to enter college already at risk for self-reported poorer outcomes.

## **Do you have any conflicts of interest?**

No

**P-25-004**

**Women's experience of co-occurring ADHD and autism | ID #360**

Abstract Submitter: Ann-Marie Low

## **Object**:

Rates of autism spectrum disorder (ASD) have increased in recent years. A substantial sub-group of autists have co-occurring ADHD. However, little literature exists concerning adults with these co-occurring conditions, particularly for women. The purpose of this study is to describe women's experience of their co-occurring ADHD and ASD, with particular focus on the degree to which women experience traits as positive, as well as challenging.

## **Method**:

10 women with newly diagnosed, co-occurring ADHD and autism have been recruited from Team for ADHD and Autism, Psychiatric Centre Glostrup, Capital Region of Denmark. Participants were interviewed with a semi-structured interview addressing several research questions, and thematic analysis conducted. In this paper, themes concerning patients' experience of their ADHD and ASD symptoms / traits are developed and described.

## **Discussion**:

Several themes have been identified from the interviewed women's narratives, including (a) "It's not just – but also…" – i.e., the same trait can be experienced concurrently as both chal-lenging and positive; (b) "It's complex" – i.e., different symptoms interact; and (c) "It's a ques-tion of energy" – i.e., the impact of a given trait is both influenced by energy levels at a given point in time, and in itself influences women's energy levels.

## **Conclusion**:

Findings to date illustrate the complexities of co-morbid ADHD and autism in women diagnosed in adulthood, a currently understudied topic. It is hoped that this study will both contribute to our understanding of the experiences of this group of individuals, and generate insights which may inform interventions for their benefit, such as more tailored psychoeducation.

## **Do you have any conflicts of interest?**

No

**P-25-005**

**Retrospective analysis of potential sex differences in naturally emerging psychiatric comorbidities over time in Turkish children and adolescents with ADHD | ID #17**

Abstract Submitter: Didem Behice Öztop

Co-Authors: Sabide Duygu Uygun, Zeynep Toprak-Kosku, Rahime Duygu Temeltürk, Merve Çıkılı-Uytun, Esra Yürümez, Tuğba Menteşe-Babayiğit, Gökçe Yağmur Efendi, Birim Günay Kılıç

**Object**:

Attention Deficit Hyperactivity Disorder (ADHD) comorbidity patterns vary by sex and age, necessitating understanding for effective diagnosis and intervention. The aim was to assess the prevalence, timing, and distribution of comorbid psychiatric disorders in a Turkish sample, focusing on potential sex differences.

**Method**:

A retrospective study included 322 children with ADHD (aged 6 to 18 years). Data were collected from university-based clinical records. Assessments included Wechsler Intelligence Scale for Children-Revised (WISC-R) for cognitive abilities and Conners' Parent/Teacher Rating Scales (CP/TRS) for ADHD symptoms.

**Discussion**:

Females showed higher rates of psychiatric comorbidity than males (83.5% vs. 62.7%, $p<.001$). Neurodevelopmental comorbidities were more common in females ($p<.001$). Mild negative correlations existed between CTRS indexes and the onset of other comorbidities. Age and specific learning disorders predicted comorbidity onset ($p=.004$ and $p=.001$). Atomoxetine was favored in females, while males received higher psychostimulant doses ($p=.035$ and $p=.050$).

**Conclusion**:

More attention is needed to females with ADHD due to high rates of comorbidity. Oppositionality, impulsivity, emotional lability, ADHD severity, age, and SLD appear to be important for the onset of internalizing and externalizing comorbidities.

**Do you have any conflicts of interest?**

No

**P-25-006**

**ADHD in females: Investigating emotional dysregulation across the menstrual cycle | ID #433**

Abstract Submitter: Elyssa Osianlis

Co-Authors: Elizabeth Thomas, Laura Brulez, Lisanne Jenkins, Caroline Gurvich

**Object**:

Recognition of sex-differences in ADHD presentation is growing, with females more frequently experiencing internalised symptoms including inattention and emotional dysregulation rather than externalised symptoms. However, research of ADHD in females is scarce, with little investigation of potential hormonal influences. We aimed to investigate emotion dysregulation across the menstrual cycle in females with ADHD compared to females without ADHD.

**Method**:

Eye-tracking tasks were utilised to measure attentional responses to emotional stimuli in a sample of 22 females with ADHD and 19 female controls without ADHD, with tasks repeated for collection in the follicular and luteal phase. Measures included performance on prosaccade and antisaccade tasks, with positive and negative emotionally valanced stimuli. Analyses compared performance between groups, and within groups across the menstrual cycle.

**Discussion**:

No significant differences were demonstrated when comparing prosaccade eye-tracking measures between the ADHD and control groups in follicular and luteal phase visits, nor in antisaccade tasks in the follicular phase. However, within-group comparisons of menstrual cycle phases found the luteal phase (characterised by lower estradiol and higher progesterone levels) was associated with increased antisaccade task error rate in the ADHD group only.

**Conclusion**:

Our results suggest differences in attentional processes in response to emotional stimuli between females with ADHD compared to females without ADHD, with potential effects of menstrual cycle phases. This is the first study to empirically measure emotional responses in females with ADHD across the menstrual cycle. Findings highlight the need for further investigation of potential hormonal influences of ADHD in females.

**Do you have any conflicts of interest?**

No

**P-25-007**

**The development and content validation of a clinical screening scale to identify ADHD cases based on the gender perspective: An e-Delphi Study | ID #12**

Abstract Submitter: Meritxell Perez-Beltran

### **Object**:

The objective of this study is to develop a self-report early detection instrument for boys and girls with ADHD aged 7 to 16, which includes the gender perspective and is sensitive to the detection of girls with ADHD.

### **Method**:

A modified e-Delphi method involving a three-round web survey was used to establish a consensus on the content of the scale. Ten experts were recruited to form a professional panel. The panel members were asked to assess the differential symptomatology of ADHD in boys and girls, the dimensions to be evaluated, and the importance of scale items to evaluate the content.

### **Discussion**:

A consensus was reached regarding 13 total items distributed in three dimensions: inattention; hyperactivity/impulsivity; and, a third dimension, internalisation, which includes symptoms most present in the expression of ADHD in girls.

### **Conclusion**:

To the best of our knowledge, the development of this scale using the Delphi method is the first specific scale used for identifying ADHD that also addresses the gender perspective and the differential symptomatology between boys and girls. We can anticipate that this scale will provide relevant and reliable information that can be used for the identification of ADHD in both boys and girls.

### **Do you have any conflicts of interest?**

No

**P-25-008**

**Endorsement of ADHD symptoms and impairment in the diva-5: Exploring gender-based differences**

**| ID #14**

Abstract Submitter: Noemi Platania

Co-Authors: Sandra Kooij, Dora Wynchank, Danielle De Graaf - Starreveld, Aartjan Beekman

**Object**:

In this study, we examined patient responses to the Diagnostic Interview for ADHD in Adults (DIVA-5) , a semi-structured tool for diagnosing ADHD. The DIVA-5 assesses current (adulthood) and retrospective (childhood) ADHD symptoms according to the DSM-5 criteria. Our aim was to explore whether there are gender differences in the endorsement frequencies of symptoms and impairments.

**Method**:

We analysed existing DIVA-5 data from 2257 adult patients diagnosed with ADHD at mental health clinics from the Parnassia Groep in the Netherlands (61% women). Gender differences in endorsement of symptoms and impairment in both adulthood and childhood were assessed using descriptive statistics and chi-square tests.

**Discussion**:

Overall, men and women showed similar rates of ADHD symptoms. When differences in current symptoms emerged, women endorsed hyperactive/impulsive and inattentive symptoms more often. Retrospectively, men endorsed most symptoms more frequently. Women reported more impairments in self-esteem, social contacts, and leisure time, while men reported more in family/romantic relationships and education. All effect sizes were small.

**Conclusion**:

Our findings reveal small but notable gender differences in endorsement of ADHD symptoms and impairment in the DIVA-5 interview. This is in line with previous research suggesting that gender-based variations in ADHD manifestation tend to be modest. We intend to use insights from this study to develop an updated version of the DIVA-5 that is better suited to identify ADHD in women.

**Do you have any conflicts of interest?**

No

**P-25-009**

**Sex differences in self-reported ADHD symptoms in clinical and population-based cohorts | ID #33**

Abstract Submitter: Berit Skretting Solberg

Co-Authors: Maj-Britt Posserud, André Høberg, Johanne Telnes Instanes, Liv Grimstvedt Kvalvik, Amalie Austgulen, Astri J. Lundervold, Anne Halmøy, Rolf Gjestad, Kari Klungsøyr, Jan Haavik

**Object**:

Although the childhood prevalence of ADHD is higher in males than in females, some studies suggest that females report more severe impairment related to ADHD symptoms than males. The reason for this gender paradox is poorly understood. Here we explored sex differences in self-reported ADHD symptoms among adolescents and adults with and without an ADHD diagnosis across clinical and population-based Norwegian samples

**Method**:

Population-based data: Norwegian Mother, Father, and Child Cohort Study (MoBa) (N=90,816; 62% females, 33.4y), the youth@hordaland study (y@h) (N= 10,257; 53% females, 17.4y), and the ADHD in Norwegian Adults (ANA) (N=1,677; 55% females, 29.0y). Outcome: Adult ADHD Self-Report Scale Screener (ASRS-6)/linear regression analyses used to explore sex differences in ASRS-6 scores between individuals with and without a self-reported ADHD diagnosis (Δ)

**Discussion**:

The ASRS-6 scores highest in the youngest participants, particularly in females (y@h). The difference in ASRS-6 scores between those with and without an ADHD diagnosis larger among females than males within all cohorts, at a significant level both in y@h and ANA (MoBa: Δfemales: b=4.6 (95%CI 3.8;5.4); Δmales: b= 4.2 (3.5;5.0); y@h: Δfemales: b= 5.1 (4.0;6.2); Δmales: b= 3.2 (2.1;4.2); ANA: Δfemales: b= 8.6 (8.1;9.2); Δmales:b= 6.5 (5.9;7.2).

**Conclusion**:

In both population-based and clinical cohorts, representing different age groups and study designs, we found a larger mean difference in reported ADHD symptoms between individuals with and without ADHD among females than males, suggesting barriers for females related to referral, assessment, and/or diagnosis of ADHD

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

BSS has received honoraria as part of medical education programs sponsored by Takeda and Medice; all outside the submitted work.

**P-25-010**

**Postpartum depression in women with ADHD: Evaluating prevalence and medication use during pregnancy | ID #305**

Abstract Submitter: Carissa Tan

Co-Authors: Xiaoqin Liu, Mette-Marie Zacher Kjeldsen, Trine Munk-Olsen, Kathrine Bang Madsen

## **Object**:

The postpartum period is a time of heightened vulnerability for maternal mental health, yet the interplay between ADHD and postpartum depression (PPD) remains poorly understood. It is crucial to clarify how ADHD may influence PPD risk. This study addresses that gap by (1) examining the prevalence of PPD in women with ADHD and (2) evaluating whether ADHD medication use during pregnancy is associated with PPD outcomes.

## **Method**:

We conducted a population-based cohort study using data from the Hope cohort and the Danish health registers (N = 170,218). ADHD was defined by diagnosis or prescription fill. PPD was defined as an EPDS score of >=11 12 weeks postpartum or a depressive episode at 6 months. Logistic regression models found prevalence and associations. In aim 2, groups were balanced with inverse probability weighting treatment using generalized boosting models.

## **Discussion**:

PPD prevalence (EPDS ≥11) was higher in women with ADHD (n = 4656) at 15.23% compared to 7.20% in women without ADHD (aOR: 1.062, 95% CI: 1.054–1.07). Depressive episodes at 6 months were also higher in women with ADHD (3.22%) vs without (0.81%) (aOR: 1.01, 95% CI: 1.007–1.013).

ADHD medication continuation (n = 60) during pregnancy was associated with an aOR of 1.454 (95% CI: 0.581–3.644) for EPDS; but, this was not statistically significant.

## **Conclusion**:

We found that PPD was more common in women with ADHD for both EPDS scores and six-month depressive outcomes. There was no significant link between continuing ADHD medication during pregnancy and PPD. Larger studies are warranted to confirm these trends and guide clinical care.

## **Do you have any conflicts of interest?**

No

**P-25-011**

**What others think and feel?: Links between social relationships, mentalizing ability, emotional intelligence and quality of attachment in women with ADHD symptoms | ID #231**

Abstract Submitter: Malgorzata Wozniak-Prus

Co-Authors: Klaudia Batorska

**Object**:

ADHD increases the risk of difficulties in social relationships, negatively affecting quality of life. Previous studies have also indicated an insecure attachment with caregivers in individuals with ADHD that is a base for social development. The study aims to identify differences in social functioning, emotional intelligence, mentalizing and quality of attachment with mother and father between women with and without a diagnosis of ADHD.

**Method**:

The online study included 173 women aged 18-57 years (84 with ADHD and 89 without ADHD). The following questionnaires were used: the ASRS Symptom Checklist (to control for ADHD symptoms), the Certainty About Mental States Questionnaire (CAMSQ), The Relationship Structures Questionnaire (ECR-RS), the interpersonal relationships subscale of GHQ-30, the Polish Emotional Intelligence Test - TIE developed by Śmieja & Orzechowski (2012).

**Discussion**:

The results showed that women with ADHD reported worse social functioning, lower certainty about their own mental states, higher levels of anxiety and avoidance in attachment with their parents compared to women without ADHD. No relationship was found between emotional intelligence and social functioning. Mentalizing abilities and low level of insecurity in relations with parents correlated with better social relationships of women with ADHD.

**Conclusion**:

The study explores factors influencing social relationships in women with ADHD, focusing on caregiver bonds. It links reduced mentalizing certainty with insecure attachment and worse social functioning. Emotional intelligence differences could not be observed due to study conditions that failed to capture daily functioning of individuals with ADHD. Findings emphasize the need to include mentalizing in psychological support of women with ADHD.

**Do you have any conflicts of interest?**

No

**P-26-001**

**Accelerating access: The power of science and automation to transform the patient experience | ID #404**

Abstract Submitter: Janelle Bierdeman

Co-Authors: Sarah Weinberg, Louise Simpson

## **Object**:

Explore how a leading provider of neurodevelopmental healthcare services automated its referral process by embedding scientifically validated tools for ADHD diagnosis and treatment into established workflows and platforms. Discover how integration advanced operational efficiency while improving the patient experience and learn how the insights uncovered will continue to drive even better outcomes into the future.

## **Method**:

The collaboration between Psicon, a UK-based neurodevelopmental healthcare provider, and MHS, Inc., developer of leading ADHD rating scales, involved clinical staff and patients. The integration embedded the Conners 4th Edition™, CAARS™ 2nd Edition, and ASRS™ into Psicon's platform via API, automating the entire assessment process. Statistical analysis showed an 85% reduction in assessment completion time.

## **Discussion**:

Psicon demonstrated significant improvements in operational efficiency and patient care. The integration of MHS' solutions reduced the average assessment completion time from 9 days to 1.5 days. Additionally, the time for a prospective client to get a referral decreased from 50-60 days to just 9 days. These results highlight impact on both organizational operations and patient experience.

## **Conclusion**:

Psicon achieved notable enhancements to both their internal operations and their patient services. By collaborating with MHS to integrate scientifically validated tools into their established workflows and platforms, they significantly increased access and reduced wait times. These improvements enable them to scale for future demand and allocate more resources to clinical care, resulting in a greater overall impact.

## **Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

I work for MHS, Inc. developer and publisher of several ADHD rating scales including the Conners 4 and CAARS 2.

**P-26-002**

**Evaluating the performance of young adults with ADHD in English as a foreign language examination under various accommodation conditions | ID #141**

Abstract Submitter: Tamar Malinovitch

Co-Authors: Noa Saka

**Object**:

This study investigated the differential impact of test-breaks versus computerized adaptive test (CAT) accommodations on the performance of young adults with Attention Deficit Hyperactivity Disorder (ADHD) in a high-stakes standardized exam of English as a foreign language (EFL).

**Method**:

Analyzing data from test-takers who took the Psychometric Entrance Test (PET) and then the Amiram English Level Placement Test, we compared English scores between two groups of test-takers: with ADHD (N=219) and without disabilities (N=12,947). Test-takers with ADHD were granted test-breaks during the PET, while all test-takers were tested using a CAT during the AMIRAM. A repeated measures ANOVA was used to compare the differences in EFL scores.

**Discussion**:

The results indicate that the PET's English section score and standard deviations (with test-breaks only for the ADHD group) and the computerized adaptive Amiram score and standard deviations were very similar for the two groups under both exam conditions ($p>.3$ for group and interaction). A significant improvement ($F=634.360$, $p<.001$) of 0.5 SD between the PET and the AMIRAM was found in both groups.

**Conclusion**:

Our findings suggest that test-breaks provide adequate accommodation for test-takers with ADHD in an EFL exam. While the computerized adaptive test is not essential, it proves to be a suitable format for both individuals with or without ADHD.

Further implications for fairness in testing and the necessity for tailored accommodations are discussed, advocating for evidence-based practices to ensure equitable testing for individuals with ADHD.

**Do you have any conflicts of interest?**

No

**P-26-003**

**Healthcare burden of ADHD among Chinese preschool children in Hong Kong using administrative datasets | ID #280**

Abstract Submitter: Claudia Cy Chung

Co-Authors: Patrick Ip

## **Object**:

This study aims to assess the healthcare burden of attention deficit/hyperactivity disorder (ADHD) among preschool children in Hong Kong. Understanding service utilisation and costs is crucial for effective interventions before primary school, as early experiences shape long-term outcomes and educational trajectories. Despite insights from studies in Western countries, data on these patterns and costs in Hong Kong remain unexplored.

## **Method**:

Using the Clinical Data Analysis and Reporting System which includes all public healthcare records in Hong Kong, we identified children ≤6 years of age with an ADHD diagnosis from January 1, 2020 to December 31, 2024. Data on outpatient visits, inpatient admissions, and accident and emergency (A&E) attendances were retrieved and were compared to the general population. Annual healthcare costs were estimated based on 2023-2024 service utilisation.

## **Discussion**:

A total of 1632 children utilised outpatient, inpatient, and A&E services related to ADHD, resulting in 10542 outpatient visits, 509 inpatient days, and 12 A&E attendances. This group accounted for 0.9% of overall outpatient visits, 0.02% of inpatient admissions, and 0.01% of A&E attendances. The estimated healthcare cost was HK$5,789,640 (€685,881)/year in 2023-24, with 65% of outpatient costs attributed to mental health and social work services

## **Conclusion**:

To the best of knowledge, this study serves as the first to estimate the healthcare burden of ADHD in Hong Kong. The findings offer insights for better resource allocation and healthcare planning, highlighting the need for mental health support as preschoolers transition to primary school. Future research on the societal impact of ADHD is warranted to better understand community needs and improve social care and educational planning in the region

## **Do you have any conflicts of interest?**

No

**P-26-004**

**Perceptions of the neurodiversity movement: Threat or opportunity for adults with ADHD? | ID #413**

Abstract Submitter: Amy De Roubaix

Co-Authors: Lessa Schippers, Rob Abels, Patricia Van Casteren, Corina Greven, Petra Hurks, Rob Rodrigues Pereira, Anouk Scheres, Hans Van de Velde, Tycho Dekkers, Martine Hoogman

**Object**:

Neurodiversity recognizes that all people think, learn, and behave differently, framing these differences as natural variations rather than deficits. However, how Dutch adults with ADHD perceive the implications of this new movement remains unclear. This study explores attitudes among adults with ADHD toward neurodiversity and examines links between these attitudes and their demographics, experiences of stigma, and positive perceptions of ADHD.

**Method**:

A survey was co-created with the Dutch ADHD science platform, an initiative of the organisation for adults with ADHD (Impuls & Woortblind), where adults with lived experience, clinicians, and researchers collaborate. The survey contained questions across four sections: identity, neurodiversity, positive aspects, and stigma. A total of 224 adults with ADHD participated. Quantitative analyses (t-tests and correlation analyses), were performed.

**Discussion**:

Most participants (76%) resonated with the concept of neurodiversity. Participants saw both advantages and disadvantages. A majority (64%) agreed that deficit- and diversity-based perspectives could coincide. Attitudes towards neurodiversity were not linked to age, age at diagnosis, presence of co-occurring conditions, gender, and medication use, but acknowledging ADHD's positive aspects and seeing it as an illness/disorder were.

**Conclusion**:

These results indicate a high level of acceptance of neurodiversity among adults with ADHD. However, opinions on whether ADHD should be viewed as a deficit or a form of diversity vary. Personal perceptions of ADHD, rather than demographic factors, seem central to neurodiversity attitudes. Our results are important for clinicians wondering if and how to incorporate neurodiversity into their work.

**Do you have any conflicts of interest?**

No

**P-26-005**

**Regional multidisciplinary quality circles to improve the care of ADHD patients: The example of Central Switzerland | ID #85**

Abstract Submitter: Mengia Dosch

Co-Authors: Bahar Sen, Sarah Meyer, Alina Timilero, Oliver Bilke-Hentsch, Esther Sobanski

**Object**:

Various organisations and specialists are involved in the multimodal treatment of ADHD patients, especially those with comorbidity. Due to the often high level of suffering and the social disadvantages of an untreated ADHD disorder, the pressure in the various family, school and healthcare systems is often very high and cooperation is of the utmost importance. The question arises as to which forms of cooperation are regionally favourable.

**Method**:

Together with the Swiss Society of Internal Medicine, a coordinated process of forming quality circles has been initiated. Once paediatricians and child and adolescent psychiatrists have been trained as quality circle moderators, multidisciplinary circles can be set up and managed regionally to tackle difficult individual cases and fundamental issues using a standardised problem-solving procedure.

**Discussion**:

1. greater competence of paediatricians in private practice in the area of medication.

2. intensive involvement of parent organisations (ELPOS) in decision-making processes.

3. greater understanding among school psychological services

4. improvement of differential diagnostics through faster involvement of other disciplines

5. consistent establishment of a specialist ADHD consultation hour as a coordination and coordination centre.

**Conclusion**:

If certified and accredited quality management is introduced consistently and on a regional basis, the overall quality of treatment for ADHD patients can be significantly improved, while at the same time improving work satisfaction, transparency and the ability of the various disciplines to cooperate. The realisation of this process within the framework of national quality assurance measures (Article 59 KVG in Switzerland) supports this process.

**Do you have any conflicts of interest?**

No

**P-26-006**

**EBF3-related neurodevelopment disorder affecting an individual of Singaporean Arab and Malay origin: Case report and review of the literature | ID #452**

Abstract Submitter: Chitra Gangadaran Ramalingam

Co-Authors: Sandra Sylvia Mascarenhas, Jiin Ying Lim, Jeannette Goh, Lourdes Mary Daniel, Pratibha Agarwal, Sylvia Kam, Swee Lian Ivy Ng, Terrence Gerard Sundram Thomas, Weng Khong Lim, Saumya Shekhar Jamuar

### **Object**:

Neurodevelopmental disorders(NDD), like Intellectual disability(ID), are heterogenous in clinical characteristics and genetic factors, lacking unique significant features. Whole exome sequencing has identified many novel disease-gene associations. Pathogenic de novo variants in Early B-cell Transcription Factor 3(EBF3),a protein coding gene located on chromosome10q26, reported to cause EBF3-NDD, Hypotonia, ataxia and delayed development syndrome.

### **Method**:

We report a 13-year-old girl who presented with global developmental delay, hypotonia, ataxia, short stature with failing to thrive and cardiac abnormality. Whole exome sequencing identified a heterozygous pathogenic variant c.196A>G(p.Asn66Asp) in EBF3. Her Brain MRI was normal.

### **Discussion**:

Clinical profile of EBF3 variants includes ID, motor and speech delay, hypotonia, ataxia, seizures, facial dysmorphism, short stature, behavioural & genitourinary abnormalities, and MRI brain abnormalities-cerebellar hypoplasia. Our patient presented with significant motor developmental delay- hypotonia with head lag, walked at 4 years, ataxia, pes planus, dysarthria, mild ID and behavioural difficulty with short attention span.

### **Conclusion**:

Pathogenic variants in EBF3 should be considered in patients with NDD presenting with non-specific clinical features. Routine use of Whole exome sequencing and whole genome sequencing helps expand the genotype-phenotype in these patients.

### **Do you have any conflicts of interest?**

No

**P-26-007**

**Review of recent clinical practice guidelines for ADHD in Asia | ID #51**

Abstract Submitter: Choon Guan Lim

**Object**:

The objective of this study is the review the recommendations of recently published clinical practice guidelines (CPGs) for attention deficit hyperactivity disorder (ADHD) to explore the variation of clinical practice across Asia.

**Method**:

An online search was conducted for CPGs for ADHD which were published between 2013 and 2023, and in the English language. The keywords used were 'ADHD', and search databases included Pubmed. A total of 16 CPGs were identified. Of these, only 3 were published in Asia including India (2019), Malaysia (2020) and Singapore (2014). All 3 CPGs addressed the management of ADHD in children and adolescents only.

**Discussion**:

Common recommendations include a thorough clinical assessment to reach diagnosis. For treatment, all recommended psychoeducation, followed by psychosocial/non-pharmacological interventions and then pharmacological intervention. Stimulant medication was the first line treatment followed by Atomoxetine. Both Indian and Singaporean guidelines stated preference for psychosocial intervention over medication for preschoolers.

**Conclusion**:

Available guidelines for ADHD in Asia are largely similar in their recommendations. Recommendations for medication choice are affected by availability. These guidelines do not cover treatment for adults and this is an area of need.

**Do you have any conflicts of interest?**

No

**P-26-008**

**Identification of variables and factors that impact ADHD masking | ID #173**

Abstract Submitter: Chiharu Maeda

Co-Authors: Russell Ramsay, Eriko Takahashi, Taisuke Katsuragawa

**Object**:

It has been suggested that attention deficit hyperactivity disorder (ADHD) individuals tend to experience difficulties due to their traits. It has also been shown that some of them often conceal their traits from others, as “ADHD masking.” It is related to the cognitive evaluation and the process of implementation. However, it is not clear what specific variables are involved. Therefore, in this study, an interview survey was conducted.

**Method**:

Twenty-four ADHD individuals were interviewed between December 2024 and January 2025. The Interviews were conducted via Zoom, with each session lasting between 1.5 and 2 hours. Subjects were recruited using the SNS (X: previously called Twitter). This study was approved by the Ethics Review Committee of the university of which the first author is affiliated (Approval number: 2023-289).

**Discussion**:

Even with the same ADHD masking behavior, the effects produced, and their degree differed from person to person. It was suggested that various factors were involved, such as concerns about peer evaluation, consideration for others, lack of flexibility, and anxiety about failure. In addition, it was found that these factors were related to childhood experiences of anger from adults, relationships with friends, public stigma, and self-stigma.

**Conclusion**:

Variables adjusting for the influence of ADHD masking were identified. These should be used to create and examine a model diagram for ADHD masking.

**Do you have any conflicts of interest?**

No

**P-26-009**

**Evaluating the impact of ADMiRE, Ireland's pioneering early access service for childhood ADHD | ID #241**

Abstract Submitter: Olateju Mafe

Co-Authors: Sarah Sexton, Barbara Cawley, Sarah Watters, Jennifer Keane, Tim Quane, Jacqueline Behan, Sharon Ryan, Louise O'Rourke, Matthew Shipsey, Jane Mcgrath

## **Object**:

ADMiRE is Ireland's first public specialist service for young people (YP) with Attention Deficit Hyperactivity Disorder (ADHD) (McGrath, 2024). The ADMiRE model of care involves a standardised assessment/intervention protocol similar to the Dundee Pathway (Coghill & Seth, 2015). The research objective was to complete a six-year audit in ADMiRE to determine adherence to international standards and ensure provision of high-quality ADHD care.

## **Method**:

Files of all young people attending ADMiRE were audited annually over 6 years (2019 to 2024). The audit investigated adherence to NICE ADHD guidelines (NG87), and included additional information about demographics, diagnosis (including comorbidities), assessment, ADHD severity and pharmacological treatment. The audit data was analysed to investigate compliance with NG87 standards, and to compare progress and trends over the six year period.

## **Discussion**:

235 YP currently attend ADMiRE (M:F 7:3, age 6-18). Key findings: 1)Excellent adherence to NG87 guidelines, with improvements in health monitoring, communication, care planning, and Irish Mental Health Commission standards, 2)Increased ADHD recognition in females, 3)Prescribing shifts: reduced Atomoxetine, increased Guanfacine augmentation of stimulants, 4)Increased recognition of comorbidity, 5)Very high service-user satisfaction (2024 survey).

## **Conclusion**:

Over the past 6 years, ADMiRE has pioneered the development of effective, efficient, safe, and scalable ADHD service provision in Ireland. The audits demonstrate ongoing optimisation of the ADMiRE model, which facilitates evidence-based, standardised care. Numerous CAMHS teams nationally have adopted the ADMiRE model. Digital transformation of the model will be introduced in 2025, enhancing accessibility, standardization, and scalability.

## **Do you have any conflicts of interest?**

No

**P-26-010**

**Visuo-spatial processing and reading outcomes in children with reading disability | ID #202**

Abstract Submitter: Ellen Braaten

Co-Authors: Ellen Braaten, Alex Kaminsky, Joanna Christodoulou, Pieter Vuijk, Karolina Wade, Alysa Doyle

**Object**:

Youth with ADHD and other neuropsychiatric conditions are at risk for reading disability (RD). Children with RD are often impacted by challenges in component skills, including visuo-spatial processing (VSP). We offer a novel study testing the association between the Rey-Osterrieth Complex Figure (ROCF) and reading comprehension in child psychiatry outpatients with and without ADHD.

**Method**:

Participants were 200 children (ages 8-12) with RD from the Longitudinal Study of Genetic Influences on Cognition who completed Word Reading (WR) and Reading Comprehension (RC) subtests. Hierarchical linear regression models assessed the associations between ROCF-C, ROCF-I, and ROCF-D on RC controlling for age, sex, WIAT version, and WR. Follow-up models examined how ROCF-I and ROCF-D were associated with RC over and above ROCF-C.

**Discussion**:

We offer a novel study testing the association between the Rey-Osterrieth Complex Figure (ROCF) and reading comprehension in child psychiatry outpatients with RD to probe the link between VSP and higher order reading demands. Prior work using the ROCF has examined VSP within RD, but not the association between VSP and reading outcomes.

**Conclusion**:

This study presents novel insights into the nature of VSP among child psychiatry outpatients with RD, with implications for assessment and instruction for youth with ADHD.

**Do you have any conflicts of interest?**

No

**P-26-011**

**Association between distractibility and night-sleep trajectories on social-emotional competency in early childhood | ID #94**

Abstract Submitter: Rashmi Mittal

Co-Authors: Felicia Tan, Sandra Mascarenhas, Shirong Cai, Birit Broekman, Shang Chee Chong, Elaine Tham, Hai Yan Xu, Xia Ju Fu, Lourdes Mary Daniel, Pratibha Agarwal

**Object**:

Children with neurodevelopmental disorders might have temperamental precursors in early childhood such as being distractible and having poorer social-emotional competency (SE). Sleep is also known to significantly influence SE. This study investigates the association between distractibility and SE in early childhood, and whether night-sleep buffers the association using longitudinal data from Singapore's largest birth cohort study, GUSTO.

**Method**:

SE at 24m was assessed using parent-reported Ages & Stages Questionnaires: Social-Emotional (ASQ:SE). Previously published 3-24m night-sleep trajectories (Cai et al., 2023) and 9m distractibility scores from temperament questionnaire (RITQ), were assessed for their relationship to ASQ:SE, in ANCOVA and regression analysis, and together in moderation analysis, controlling for demographics and maternal mental health.

**Discussion**:

In the cohort (n=260), distractibility scores on RITQ were significantly associated with SE ($p < 0.03$). Night-sleep trajectories moderated this effect on SE ($p = 0.03$). Children with long consistent night-sleep trajectories had similar SE even when distractibility scores on RITQ varied. However, children with short variable and moderate consistent trajectories had poorer SE with higher distractibility scores on RITQ.

**Conclusion**:

Higher scores on RITQ-distractibility subscale was associated with poorer SE at 24 months in children and only long consistent night-sleep trajectory buffered this association. Therefore, advocating for sleep schedules that are both long and consistent, especially for children with higher distractibility scores, is critical in promoting optimal SE.

**Do you have any conflicts of interest?**

No

**P-27-001**

**The Origins of ADHD: Something that exists but is not recognized | ID #484**

Abstract Submitter: Kazuya Ono

**No Abstract text available**

**P-27-002**

**Parental interpersonal emotion regulation and its impact on emotion dysregulation in children with ADHD | ID #482**

Abstract Submitter: Naama Gershy Tsahor

Co-Authors: Irit Schorr Sapir, Neta Krinsky, Hadar Ne'eman-Ishay

**Object**:

Children with ADHD often struggle with emotion regulation deficits. While much research has explored antecedents of emotion dysregulation, little is known about how parents can effectively regulate their children with ADHD, and whether paternal and maternal interpersonal emotion regulation (IER) have differentiated influences. This study examined how different parental IER strategies contribute to children's emotion dysregulation.

**Method**:

Fifty-eight families of children diagnosed with ADHD (mean age = 9.37 years, 70% males) participated in the study. Families were video-recorded during a triadic discussion about a conflict. Parental IER strategies were behaviorally coded into emotion and solution-focused strategies. The child's emotion dysregulation was evaluated before and during the conflict discussion using pitch analysis.

**Discussion**:

Mothers made more supportive IER attempts than fathers, but both contributed significantly to the child's emotion regulation. Solution-focused strategies were more prevalent than emotion-focused strategies, but both contributed to reduced emotion dysregulation. Parental supportive IER strategies moderated the relationship between the child's chronic emotion dysregulation and their emotion dysregulation during the interaction.

**Conclusion**:

The results demonstrate the complementary contribution of solution-focused and emotion-focused strategies to children with ADHD's emotion regulation. They also highlight the contribution of each parent to the process. Finally, the results show that even children with chronic elevation in emotion dysregulation can respond more calmly to stressful and arousing interactions when receiving supportive parental IER.

**Do you have any conflicts of interest?**

No

**P-27-003**

**Defining benchmarks for the use of deep language model to build simulated parents of children with ADHD used in training in a strengths-based ADHD diagnostic interview | ID #374**

Abstract Submitter: Philippe Robaey

Co-Authors: Parishad Behnamghader, Benjamin Hudson, Lauren Gowans, Siva Reddy

### **Object**:

The Strength-Based Interview for Behaviour (SIB-P), a semi-structured interview for the diagnosis of ADHD in children, assesses each symptom along a continuum from strength to weakness. We have designed a group training process in which role-playing is central, with one trainee as clinician and the other as the parent of a child with ADHD. Our aim is to use a Large Language Model (LLM) to simulate the role of parents in these role-plays.

### **Method**:

One LLM is tasked to respond to the clinician's questions according to metadata from actual interviews. To assess the quality of LLM's narratives, we defined a series of criteria: coherence, fluency, realism, flexibility/adaptability, spontaneity. In addition, we defined different criteria for a second LLM that will provide feedback on the trainee's interviewing skills: clarity, relevance, openness of questions, empathy and sensitivity.

### **Discussion**:

Comparing the experts' assessment of these criteria in two different data sets (trainee role-play, interactive LLM) helps to establish benchmarks in simulation training for ADHD diagnosis

### **Conclusion**:

The use of LLM to support simulation during training has the potential to revolutionize the use of self-paced, web-based training, and increase the number of well-trained professionals authorized to administer validated diagnostic interviews.

### **Do you have any conflicts of interest?**

No

none

**P-27-004**

**Evaluating a self-directed, web-based training using video simulations for an ADHD strength-based diagnostic interview | ID #400**

Abstract Submitter: Philippe Robaey

Co-Authors: Benjamin Hudson, Chantale Melo

## **Object**:

This study aimed to evaluate the effectiveness of a self-directed, web-based training for the Strength-Based Interview for Behaviour (SIB-P), a semistructured interview for ADHD diagnosis in children that rates behavioural strengths as well as weaknesses. The study sought to determine if web-based self-paced training through interactive webpages with video simulations is non-inferior to instructor-led training using lectures and roleplay.

## **Method**:

This ongoing randomized, non-inferiority trial involves two parallel arms: one group receiving training via webinar and another completing web-based online modules. Participants include professionals and students in mental health (N=80). Before and after training, trainees complete a mock interview with an actor playing a parent. Trainees are scored on a 5-point O-SCALE to measure task independence and results from both groups are compared.

## **Discussion**:

To date, one cohort (N=12) has completed the study. Participants in both the webinar and website groups were comparable across 5 assessment criteria: 1) knowledge of ADHD symptoms, 2) questioning ability, 3) response analysis, 4) organization, and 5) record keeping. Participants highlighted the accessibility and flexibility of the web-based format, but also a preference for the immediate in-person feedback of the instructor-led approach.

## **Conclusion**:

Preliminary findings suggest that self-directed web-based training using video simulations, may provide an effective alternative to traditional instructor-led training for the SIB-P. This approach has the potential to improve access to high-quality ADHD diagnostic training, reaching more trainees in diverse settings, taking less time at a lower cost, and providing a model for expanding training capacity in diagnostic interviews of this type.

## **Do you have any conflicts of interest?**

No

none

**P-27-005**

**Psychiatrist, parent and youth perspectives on the use of home video conferencing in ADHD care | ID #398**

Abstract Submitter: Philippe Robaey

Co-Authors: Alexander R. Maisonneuve

### **Object**:

Since the COVID-19 epidemic, the use of videoconferencing using consumer applications installed on personal devices in mental health care has become widespread in Canada. It enables highly flexible between patients and the greater circle of care. Given the rapid adoption and widespread use of videoconferencing, we aimed at determining how psychiatrists, young people and parents perceive the benefits and risks of using videoconferencing.

### **Method**:

On this topic, the Canadian Academy of Child and Adolescent Psychiatry organized an online debate with 3 physicians, and the participation of an audience (N=44) with polls. At the ACFAS 2024 conference, we organized a workshop with parents (N=5) and young people (N=4), mostly with an ADHD diagnosis, and a virtual and in-person audience. Data from both gatherings were recorded, transcribed, coded, and analyzed using a thematic analysis approach.

### **Discussion**:

Younger people felt that videoconferencing could bring new flexibility to more spontaneous and interactive interactions in a familiar environment. Parents emphasized the ease of access to care, and the ability to flexibly invite key partners (social workers, friends, school staff). Psychiatrists judged its effectiveness comparable to face-to-face meetings, with 2/3 of the audience supporting exclusive virtual practice for some.

### **Conclusion**:

Videoconferencing , suddenly generalized by the COVID-19 pandemic, is here to stay. This is particularly evident in mental health care including the management of ADHD. Optimal use of home video conferencing in ADHD will require the development of hybrid strategies and new training for caregivers.

### **Do you have any conflicts of interest?**

No

none

**P-27-006**

**School absenteeism among clinically-referred youth with ADHD: A machine learning approach to classification**

**| ID #383**

Abstract Submitter: Maria Rogers

Co-Authors: Patrick Goh, Jess Whitley, David Smith, Natasha Mcbrearty, Zara Hewson, Ashlyn A. W. W. A. Wong, Grace S. Mellor

**Object**:

School attendance is among the top social determinants of health worldwide. Emerging research suggests that children and youth with ADHD miss more school than their neurotypical peers, and ADHD remains the most prevalent disorder associated with high school dropout. This study aimed to develop an algorithm using machine learning techniques that would accurately classify those at risk of school absenteeism and to determine variables of importance.

**Method**:

Participants were parents of 198 clinically-referred youth with ADHD (Mage: 10.3 years; 26.3% female) who were seeking services a children's mental health treatment centre in a large Canadian city. During their intake appointment, parents responded to 80 questions about a range of bio-psycho-social-educational risk factors, and also completed questions pertaining to their child's history of school attendance and absenteeism.

**Discussion**:

Machine learning using random forest analyses showed the model classified youth with absenteeism with acceptable to excellent discriminability (AUCs = .74-81). Follow-up variable importance analyses showed the most important risk factors for classification of absenteeism risk: 1. Interfering Behavior at School, 2. Depressing Mood or Thoughts, 3. Vulnerability to At-Risk Behaviour, 4. Inconsistent Parenting, 5. Interfering Behavior at Home.

**Conclusion**:

This study provides support for the use of actuarial methods in classifying school absenteeism among children and youth with ADHD. It highlights specific variables that play an important role in predicting absenteeism, thus has clinical and educational implications for practice. This research and methodology has potential to inform robust and replicable screening practices to prevent educational risk among children and youth with ADHD.

**Do you have any conflicts of interest?**

No

None

**P-27-007**

**Perception of ADHD in Poland: Differences between gender, age groups, and knowledge of ADHD | ID #372**

Abstract Submitter: Aleksandra Frontczak

Co-Authors: Catarina Pignatelli, Luka Kalita, Zofia Jaworska, Aleksandra Frontczak, Amálie Salajková, Samin Ranjbaran, Esra Salman, Tiago Gonçalves

### **Object**:

This pilot study is part of a larger multicultural project exploring cultural differences in the perception of ADHD symptoms. The primary goal is to assess 26 vignettes depicting various ADHD symptoms.

### **Method**:

A survey was conducted with 1,095 Polish participants (67.2% female), aged 18 to 76 years (M = 27.3, SD = 12.1). Participants evaluated vignettes illustrating ADHD symptoms. The analysis focused on four categories: hyperactivity, inattention (both based on DSM-V criteria), emotional dysregulation, and low frustration tolerance.

### **Discussion**:

Youths found inattention more typical, while older identified less with it. Participants were more likely to recommend evaluation for hyperactivity than inattention. Women more often recommended evaluation, rated emotional dysregulation as less typical, and identified with inattentive characters. Men showed stronger associations with hyperactivity and emotional dysregulation. Knowledgeable participants identified more with hyperactivity.

### **Conclusion**:

These findings underscore the need for further research into intercultural differences in ADHD symptom perception. Understanding cultural contexts can improve diagnostic practices and inform symptomatology. Future studies should expand this work to include diverse cultural perspectives.

### **Do you have any conflicts of interest?**

No

**P-27-008**

**The intelligence structures of school-age children with ADHD: A multicenter cross-sectional study in China | ID #435**

Abstract Submitter: Jing Tan

Co-Authors: Li Chen, Lin Zhu

**Object**:

There is no consensus on whether cognitive measures among ADHD subtypes exhibit more similarities or differences, and most of them have been conducted on English-speaking subjects, lacking cross-cultural perspectives. The present study was aimed at investigating the intelligence structures of school-age children with ADHD who speak Chinese, using a multicenter and large sample size approach, offering some references for clinicians

**Method**:

772 children aged 6 to 12 years with ADHD took part in the cross-sectional study. All participants underwent the Chinese Wechsler Intelligence Scale for Children-Third Edition assessment.

**Discussion**:

Our study supported that ADHD substyles shared more similarities in intelligence structures. Boys outperformed girls in PIQ

and some subtests. Older children outperformed in block design and object assembly, but underperformed in VIQ and VC factor.

**Conclusion**:

Clinicians should consider the gender differences and the distribution of intellectual strengths and weaknesses of children with ADHD. It's important to focus on developing children's language development and proactively screening for related comorbidities in the management and treatment of school-age children with ADHD.

**Do you have any conflicts of interest?**

No

**P-27-009**

**ADHD and anxiety disorders in adolescents: Unveiling digital behavior trends through machine learning | ID #222**

Abstract Submitter: Tudor Vaidean

Co-Authors: Roxana Sipos, Andreea-Marlena Rapciuc, Costina-Ruxandra Poetar, Elena Predescu

**Object**:

This study uses machine learning to explore the relationship between digital engagement patterns and anxiety symptoms in adolescents with ADHD. Additionally, it assesses the impact of other factors, including non-digital activities, comorbidities, and family and interpersonal contexts.

**Method**:

This cross-sectional study involved 97 adolescents with ADHD, aged 11-18, and their parents. Participants completed validated questionnaires assessing daily activities, ADHD and anxiety symptoms, along with other relevant contextual factors. Random Forest regression, a machine learning method, was used to establish a hierarchy of the most significant variables predicting various facets of digital behaviors in these adolescents.

**Discussion**:

Consistent with prior research, this study confirms that different factors influence various digital activities. Social media was the primary digital activity, especially for females. Notable gender differences were observed, with family dynamics having a more significant impact on girls. Specific anxiety traits, such as physical symptoms and harm avoidance, significantly predicted time spent on social media across all genders.

**Conclusion**:

There is a complex interplay between screen time, ADHD and anxiety symptoms in adolescents. Social media use was higher among girls, potentially linked to family dynamics, anxiety coping and aggression. Notably, separation anxiety and cyberbullying impacted boys' and girls' social media use differently. Specific digital activities, such as video gaming, were less predictable, potentially driven by intrinsic motivations.

**Do you have any conflicts of interest?**

No

**P-27-010**

**Empedocles and the first description of ADHD in Ancient Greece by older than Hippocrates | ID #232**

Abstract Submitter: Michiel Willem van Kernebeek

Co-Authors: Cleo Lina Crunelle

### **Object**:

The history of ADHD can be traced back to research from the Eighteenth century. However, some descriptions of ADHD in Ancient Greek medical texts have been mentioned, such as the Hippocratic Corpus. We propose an even older text, by Empedocles, an Ancient doctor and philosopher, that describes a medical condition that resembles ADHD.

### **Method**:

The historical context is presented. The Greek text and its translation (describing an excessive amount of fire in the mind that leads to impulsivity, racing thoughts and the inability to focus) are presented and its impact on later scientific literature is discussed.

### **Discussion**:

Empedocles' description of attention deficit is the oldest known to date and it thoroughly sparked the subsequent literature, making this text an important moment in the rich and long history of ADHD. Although not directly connected to our modern understanding of ADHD, it shows that ADHD appears in many different cultures and time spans.

### **Conclusion**:

ADHD has been present throughout history and is in no way a hype phenomenon.

### **Do you have any conflicts of interest?**

No

**P-27-011**

**Admissions to an inpatient drug and alcohol service: How often are prescription stimulants implicated? | ID #296**

Abstract Submitter: Alison Poulton

Co-Authors: Hazer Khalifa, Natalie Gauci, Emily Hibbert, Jeffrey Kruk, Karen Fisher, Brock Mcmillan

**Object**:

Prescription stimulants are controlled drugs due to their potential for abuse and addiction. However, published evidence of addiction to prescription stimulants is sparse. The aim or this study was to assess the addictive potential of prescription stimulants by reviewing the primary drugs of concern of people admitted for detoxification to the drug and alcohol service of a single tertiary metropolitan hospital.

**Method**:

Retrospective audit of admissions for detoxification to the Nepean Hospital Drug and & Alcohol Service between 28 December 2016 and 21 December 2022. An electronic database of admissions was used for initial analysis. Individual patient electronic medical records were examined for the patients admitted for detoxification to stimulants.

**Discussion**:

Of 3299 admissions, the drugs for detoxification were alcohol (47.8%), stimulants (17.6%), opioids (16.0%) cannabis (13.1%), other (5.5%).

Of the 581 admitted for detoxification to stimulants, in 91.9% this was methamphetamine. There was one admission for detoxification to several drugs including methylphenidate. Previous prescription stimulant abuse was reported by a further 6 (2 with diagnosed ADHD).

**Conclusion**:

In this large cohort of 3299 admissions over a four-year period, there was one single case of detoxification involving a prescription stimulant. From these preliminary findings it would appear that prescription stimulant dependence and addiction is uncommon. However, our results may not apply to other regions and countries and further research is necessary.

**Do you have any conflicts of interest?**

Yes, I have a conflict of interest.

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