



**2021 APSARD
Virtual Conference
January 15-17, 2021
ABSTRACTBOOK**

ADHD in the Era of COVID: Maintaining Focus



The American Professional Society
of ADHD and Related Disorders

Thursday, January 14, 2021

**denotes sessions that will not be recorded and only available live*

***PRE-CONFERENCE WORKSHOP: A LIFETIME OF ADHD: DIAGNOSIS, TREATMENT AND CLINICAL PEARLS**

1:30 P.M. - 6:15 P.M.

Chair: Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

Co-Chair: Jeffrey Newcorn, Mount Sinai Medical Center

Presenters:

Jeffrey Newcorn, Mount Sinai Medical Center

Tanya Froehlich, Cincinnati Children's Hospital Medical Center

Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

David Goodman, Johns Hopkins at Green Spring Station

Overall Abstract:

Although attention-deficit/hyperactivity disorder or ADHD is the most common neurobehavioral disorder in childhood and often persists as children become adolescents and adults, many patients may not be identified or optimally treated after diagnosis. The lack of proper diagnosis and treatment can have severe implications ranging from school failure to increased mortality. At the end of the presentations, participants should be able to diagnose and treat ADHD in patients in various stages of life. This course will discuss the prevalence of ADHD in preschoolers, older children, adolescents, and adults; the differing symptoms at each of these stages; evidence-based treatment guidelines and how to apply these to clinical practice.

BOARD MEETING

6:30 P.M. - 8:30 P.M.

**Invite only*

Friday, January 15, 2021

OPENING PLENARY: *ADHD IN THE ERA OF COVID

8:00 A.M. - 9:45 A.M.

Chair: Jeffrey Newcorn, Mount Sinai Medical Center

Panelists:

Jeffrey Newcorn (US)

Greg Mattingly (US)

Tobias Banishewski (Germany)

David Coghill (Australia)

Samuele Cortese (UK)

Martin Gignac (Canada)

Iris Manor (Israel)

Luis Rohde (Brazil)

Takuya Saito (Japan)

Yi Zheng (China)

Overall Abstract:

The Covid-19 pandemic has had a profound impact on the conduct of medical and psychiatric practice world-wide. Emerging data suggests that ADHD may be a risk factor for developing ADHD. Moreover, recovery from Covid-19 may be associated with a range of cognitive dysfunctions, including attention deficits. These specific associations are of considerable importance to our field. But the impact of Covid-19 on ADHD and its treatment extends far beyond these specific associations. Changes in educational practices, restrictions on peer contact, and changes in family interactions and dynamics have had a profound impact at the individual and societal levels.

Covid-19 is a world-wide pandemic, so it only seemed appropriate to consider the impact of Covid-19 on the clinical presentation and treatment of ADHD from a world-wide perspective. We have therefore collected a group of international experts in ADHD to present on the impact of Covid-19 on ADHD clinical practice and research – highlighting the impact in each country/geographic region represented. Each of the panelists will briefly discuss the impact of Covid-19 on clinical care in their country, highlighting shifts in attitudes towards diagnosis and management, guidelines that have been issued, and research that has been undertaken. Following the brief presentations that each of the panelists will make, we will have a discussion among the panelists, followed by discussion with the audience. This session will highlight national/regional

differences in how ADHD has been diagnosed and treated during the Covid-19 pandemic, as well as important commonalities in approach.

Learning Objectives:

- Attendees will appreciate the various approaches used to treat ADHD in the context of the Covid-19 pandemic.
- Attendees will appreciate how Covid-19 has impacted clinical care of youth and adults with ADHD world-wide.

INDUSTRY SPONSORED SYMPOSIA: IRONSHORE

A Paradigm Shift in ADHD Therapy by Targeting Colonic Absorption

9:45 A.M. - 10:45 A.M.

Speakers:

Lewis Warrington, MD

VP, Medical Affairs

Ryan Gregg, PhD

Medical Science Liaison

Moderator: Dr. Steven Pliszka

Overall Abstract:

This symposium will explore how colonic absorption of methylphenidate may contribute to a smooth pharmacokinetic profile and a dose-dependent duration of effect. The implications of these unique properties for the treatment of ADHD will also be discussed.

CONCURRENT SYMPOSIA

11:00 A.M. - 12:30 P.M.

ADHD AND PTSD

Chair: Andrea Spencer, Boston University School of Medicine

Relationship between ADHD and PTSD: A Systematic Review and Meta-Analysis

Joseph Biederman, Massachusetts General Hospital

Neurobiology of Conditioned Fear and Its Extinction: Relevance to ADHD and PTSD

Mohammed Milad, NYU Medical School and Nathan Kline Institute

A Controlled fMRI Study of Fear Circuitry in Attention Deficit Hyperactivity Disorder

Andrea Spencer, Boston University School of Medicine

Relationship between Pre-Trauma Deficits in Attention and PTSD Symptoms in Trauma-Exposed Youth

Michael Silverstein, Drexel University

Overall Abstract:

In this symposium, we will present data on the connection between ADHD and PTSD. This topic is important and timely, given that individuals with ADHD may be particularly vulnerable to the effects of recent, large-scale traumatic events experienced in the US and throughout the world. Our symposium will include four presentations on this topic. First, Dr. Biederman will present findings from a systematic review and meta-analysis on the relationship between ADHD and PTSD, which showed a robust bidirectional association between ADHD and PTSD. ADHD was most commonly reported to be an antecedent to PTSD in both adults and children, suggesting a neurobiological vulnerability that predisposes individuals with ADHD to develop PTSD. Next, Dr. Milad will present his groundbreaking, translational scientific work examining fear extinction. Dr. Milad will describe the fear extinction paradigm initially tested with rodents and then translated to humans and subsequently tested in different healthy and clinical populations. Dr. Milad will present findings on neurobiological differences in fear extinction in individuals with PTSD vs. non-traumatized controls, as well as findings in other psychiatric disorders that predispose individuals to develop PTSD. In the third presentation, Dr. Spencer will report on findings from a neuroimaging study to examine whether individuals with ADHD have abnormalities in fear circuitry resembling those found in PTSD, using Dr. Milad's paradigm. In this study, non-traumatized, medication naive adults with ADHD had abnormalities in fear circuits, some of which are similar to those previously documented in subjects with PTSD vs. traumatized controls without PTSD. Finally, Michael Silverstein will present his original research on the relationship between pre-trauma attention deficits and posttraumatic stress symptoms in youth exposed to trauma.

Learning Objectives:

- The participant shall be able to understand the practice implications of the link between ADHD and PTSD in adults and children.
- The participant shall be able to understand the practice implications of a vulnerability paradigm, whereby one disease confers higher risk for another.
- The participant shall be able to appreciate the clinical applicability of a translational research program.

CHILDREN'S MENTAL HEALTH AND THE PANDEMIC: LOOKING BACK AND

LOOKING FORWARD

Chair: Russell Schachar, The Hospital for Sick Children

Mental Illness as Risk Factor and Consequence of the 1918 Influenza Pandemic

Svenn-Erik Mamelund, Oslo Metropolitan University

Neurological Complications of COVID-19 in Children

Ann Yeh, Hospital of Sick Children and University of Toronto

Overall Abstract:

This symposium will address the psychosocial and neurobiological impact of the COVID-19 pandemic on mental health of children. Adequate understanding of the potential consequences of the pandemic are essential for the development of equitable and effective preparedness policies and practice guidelines under and after the pandemic. Svenn-Erik Mamelund will review the lessons that have been learned from the 1918 influenza pandemic and Ann Yeh will review current knowledge of observed and potential neurological complications related to COVID-19 in children that might increase risk for mental health problems.

Learning Objectives:

- Attendees will become familiar with the historical evidence linking the 1918 influenza pandemic with mental illness.
- Attendees will be able to describe the evidence linking COVID-19 infection with neurological consequences.
- The attendee will be able to describe the mechanism by which COVID-19 could impact neurological function.

THE VULNERABILITY OF PEOPLE WITH ADHD TO THE COVID-19 VIRUS OUTBREAK

Chair: Iris Manor, Geha MHC

Increased Risk for Hospitalization in Subjects With ADHD Infected With Covid-19 Virus

Iris Manor, Geha MHC

ADHD as a Risk Factor for Infection With COVID-19 Virus

Margaret Weiss, Cambridge Health Alliance

ADHD and the Outbreak's Impact on Health, Lifestyle, Life Satisfaction, and Economic Status

Yehuda Pollak, The Hebrew University of Jerusalem

Overall Abstract:

The novel coronavirus 2019 (Covid-19) pandemic has a severe impact on people's physical health, economic status, lifestyle (e.g. adherence to preventive measures which are restrictive, such as social distancing and wearing a mask), life satisfaction, and supposedly mental health. People with ADHD tend to be forgetful, distracted, impulsive, and hyperactive, as well as hypersensitive to - among other things - touch and smell. Their executive dysfunctions involve lack of flexibility, impaired working memory, and more.

Considering these ADHD characteristics, this symposium discusses the risks of having ADHD during the Covid-19 epidemic. ADHD was associated with difficulties in adapting to the new lifestyle, hence with increased vulnerability to the negative impact of the crisis. Thus, people with high levels of ADHD symptoms were found less likely to adhere to the preventative measures, more likely to be infected, and more likely to show economic deterioration, psychological distress, and lower life satisfaction during the outbreak. In another data-based study it was found that people with ADHD are at a significantly increased risk for Covid-19 infection, especially when they were not treated with pharmacotherapy. ADHD was a unique risk factor for Covid-19 among all the medical and psychiatric disorders (although some medical disorders were already under special guard, because of a previous knowledge, which may be misleading). It was also found that ADHD is a risk factor not only to being infected, by Covid-19 but it might also be a risk factor for the severity of the infection, as defined by hospitalization. It was found to be the only psychiatric disorder which poses such a risk.

Learning Objectives:

- ADHD may be a significant risk factor for Covid-19 infection.
- Treatment of ADHD could diminish this risk.
- ADHD and the Outbreak's Impact on Health, Lifestyle, Life Satisfaction, and Economic Status.
- ADHD may be a significant risk factor for hospitalization.

BREAK

12:30 P.M. - 1:00 P.M.

EXHIBITOR NETWORKING

1:00 P.M. - 1:45 P.M.

Join us as you hear from each sponsor as they provide a 2-3 minute synopsis of their company and their current focused. After the introductions, attendees will have the opportunity to go into the sponsor breakout rooms for networking.

PLENARY SESSION: *EQUITY, DIVERSITY AND ADHD*

1:45 P.M. - 3:15 P.M.

Chair: Roberta Waite, Drexel University

Co-Chair: Martin Katzman, START Clinic for Mood and Anxiety Disorders

Achieving Equitable ADHD Care for African American and Latinx Children

Tumaini Coker, University of Washington School of Medicine

The Risk of Untreated and Undiagnosed Childhood ADHD on Adult Black American's Upward Mobility and Incarceration Rates

Napoleon Higgins, Bay Pointe Behavioral Health Service, Inc.

Overall Abstract:

Inequities in access to racially and culturally competent care for those affected by ADHD must be addressed in order for individuals across the lifespan to achieve optimal health outcomes. Structural racism is a key influencer of health which will be discussed in context to understand how disparities persist for children as well as adults with ADHD leading to disparities in health and educational outcomes and increased risk for incarceration. Policies and practices have normalized discriminatory processes that uphold inequities in outcomes for black and brown racialized populations. Understanding pertinent historical information will also be discussed to enhance Parent Behavioral Training Programs for these children in order to help meet the needs of these families and strive towards equity in ADHD care. Acknowledgement and understanding the enormity of present-day policies that disproportionately affect racially marginalized populations will be highlighted. In addition, strategies will be proposed that can prevent these crises and move towards embracing the humanity of all youth and adults that deserve equitable opportunities to thrive in life.

Learning Objectives:

- Discuss how disparities in the diagnosis and treatment of ADHD for racially black and brown children are informed by structural racism.
- Identify ways to reduce disparities in ADHD care for racially black and brown children to promote their health and long-term well-being.
- Highlight the trend of mass incarceration for persons affected by ADHD.
- Describe strategies and their methods of implementation in order to avert the crises of mass incarceration with special attention to racially black and brown populations affected by ADHD.

COFFEE BREAK

3:15 P.M. - 3:30 P.M.

CONCURRENT SYMPOSIA

3:30 P.M. - 5:00 P.M.

CLINICAL, NEURAL, GENETIC CORRELATES, AND TREATMENT RESPONSE OF ADHD IN YOUTH WITH HIGH-FUNCTIONING AUTISM SPECTRUM DISORDER

Chair: Gagan Joshi, Harvard Medical School/Massachusetts General Hospital

Predictive Utility of Autistic Traits in Youth With ADHD: A Controlled 10-Year Longitudinal Follow-Up Study

Joseph Biederman, Massachusetts General Hospital

Clinical Correlates & Treatment Response of Attention Deficit Hyperactivity Disorder in Autism Spectrum Disorder

Gagan Joshi, Harvard Medical School/Massachusetts General Hospital

Neural Pathways of Attention Deficit Hyperactivity Disorder in Youth With and Without Autism Spectrum Disorder

Yuwen Hung, McGovern Institute for Brain Research, MIT

ADHD as Cause (not just comorbidity) of Autism

John Constantino, Washington University

Overall Abstract:

Both Autism Spectrum Disorder and Attention-Deficit/Hyperactivity Disorders (ADHD) are neurodevelopmental disorders that frequently co-occur and are associated with disabling morbidity. ADHD is the most common psychopathology associated with ASD, with more than half of individuals with ASD presenting with ADHD symptomatology. There is under-recognition of reciprocal comorbidity of ADHD and ASD in psychiatrically referred populations, particularly in individuals with intact intellectual functioning (high-functioning; HF-ASD). Given that treatment intervention differs for ADHD and ASD, disorder specific treatment is predicated on proper recognition of either disorder in reciprocal comorbidity. For the appropriate treatment of ADHD, it is important to recognize its presence in ASD, particularly in intellectually capable populations. This symposia aims to address the comorbidity of ADHD and ASD with particular focus on examining the clinical and neural presentation and treatment response of ADHD in youth with HF-ASD as compared to that observed in the neurotypical population and examine the prevalence and persistence of autistic traits and associated morbidity in youth with ADHD. The first presentation will discuss the results of a controlled 10-year longitudinal follow-up study that highlights the burden and predictive utility of autistic traits in youth with ADHD. The second presentation will present empirical evidence that supports that clinical presentation and treatment response of ADHD in youth with HF-ASD is as typically expected. The third presentation will provide further evidence from recently completed neuroimaging

study that confirms presence of abnormal neural profile of structural connectivity that is typically associated with ADHD in HF-ASD youth with ADHD. The last presentation will review the past five years of research on the overlap between ASD and ADHD, including developmental, longitudinal, and family genetic studies and offer a perspective on the co-occurrence of the two conditions that reflect several fundamentally-distinct mechanisms of joint causation.

Learning Objectives:

- Address the clinical and neural correlates of ADHD in the context of ASD.
- Understand the burden and predictive utility of autistic traits in youth with ASD.

IMPACT OF COVID-19 FOR CHILDREN AND ADOLESCENTS WITH ADHD

Chair: Stephen Becker, Cincinnati Children's Hospital Medical Center

Health and Wellbeing Impacts of COVID-19 Among Children and Adolescents With ADHD

Emma Sciberras, Deakin University

Prospective Impact of COVID-19 on Mental Health Functioning in Adolescents With and Without ADHD

Rosanna Breaux, Virginia Polytechnic Institute and State University

COVID-19 Pandemic Associated With Worsening Impairments Among Adolescents With ADHD

Margaret Sibley, University of Washington

COVID-19 Pandemic and ADHD: Early Effects

Mark Stein, University of Washington

Overall Abstract:

Although the COVID-19 pandemic has impacted all of us, children and adolescents are perhaps the population whose day-to-day lives have changed the most drastically. Youth typically spend upwards of 8 hours per day outside the home and thrive in well-structured, routine environments, which is challenging to maintain during the crisis. Social interactions during school and extracurricular activities are particularly important. Given that children and adolescents with ADHD experience more academic challenges, higher rates of co-occurring mental health and sleep problems, greater emotion dysregulation, and poorer coping skills, it is likely that this population may be even more at risk for experiencing poor adjustment during the pandemic. This symposium will present some of the first findings of the impacts of the COVID-19 for

the functioning and clinical care of youth with ADHD. The first three presentations include findings from data collected during the first months of the pandemic. First, Dr. Emma Sciberras will present on the myriad of both positive and negative impacts among children and adolescents with ADHD in Australia. Second, Dr. Rosanna Breau will describe the prospective impact of the pandemic on the mental health of adolescents with and without ADHD using data collected both before and during the pandemic. Third, Dr. Margaret Sibley will describe the worsening of impairments during the pandemic for teens with ADHD and the minimal clinical benefit of positive impacts. The fourth presentation, by Dr. Mark Stein, will describe the rapid impact of the pandemic for the clinical care of youth with ADHD, including examples from a large ADHD specialty clinic in discussing new directions for service delivery. Together, the presentations will describe impacts of the COVID-19 pandemic for youth with ADHD, point to important targets for intervention, and discuss novel approaches to intervention and outcome research during the pandemic and into the future.

Learning Objectives:

- Participants will be able to describe the potential negative impacts of the COVID-19 pandemic for children and adolescents with ADHD.
- Participants will be able to describe the potential positive impacts of the COVID-19 pandemic for children and adolescents with ADHD.
- Participants will be able to describe how mental health has changed from before to during the pandemic for adolescents with ADHD.
- Participants will be able to describe the acute impact of the pandemic for the clinical care of youth with ADHD.

NOVEL PHARMACOLOGY AND TECHNOLOGY APPROACHES TO THE NON-MEDICAL USE OF STIMULANTS

Chair: Stephen Faraone, SUNY Upstate Medical University

Does Naltrexone Mitigate Stimulant-Induced Euphoria?

Thomas Spencer, Massachusetts General Hospital

The Efficacy, Safety and Pharmacokinetics of AR19: An Abuse Deterrent Racemic Amphetamine Capsule

Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

Pharmacokinetic and Pharmacodynamic Studies of an Abuse Deterrent Formulation of Dextroamphetamine

Timothy Wilens, Massachusetts General Hospital

Addressing Non-Medical Use and Diversion of Prescription Stimulants through Device Innovation

Stephen Faraone, SUNY Upstate Medical University

Oral, Intranasal, and Intravenous Abuse Potential of Serdexmethylphenidate, a Novel Prodrug of d-Methylphenidate

Megan Shram, University of Toronto

Overall Abstract:

The non-medical use of stimulants has been a growing concern for clinicians, parents, and college administrators. The U.S. Food and Drug Administration has described NMU of prescription stimulants as a "serious public health concern" and has called on manufacturers to modify formulations to reduce the risk of abuse. This symposium addresses this issue by presenting data on four products in development that are attempting to create manipulation resistant forms of prescription stimulants and one that is a tamper resistant mechanical device that limits the maximum amount of medication that can be dispensed in one day.

Learning Objectives:

- The participant should be able to understand how a tamper resistant mechanical device might be useful for reducing NMU of prescription stimulants.
- The participant should understand the strengths and limitations of the various approaches of modifying prescription stimulant medications to reduce NMU.

MEET THE EXPERTS

5:00 P.M. - 6:00 P.M.

***MEET THE EXPERTS: PSYCHOPHARMACOLOGY**

Chair: Tim Wilens, Massachusetts General Hospital

Presenters:

Frances Levin, Kennedy Leavy Profession of Psychiatry

Luis Rohde, Federal University of Rio Grande do Sul, Brazil

Tim Wilens, Massachusetts General Hospital

Overall Description:

The panel of Ask the Experts will address clinical questions on psychopharmacology in children, adolescents, and adults, from the audience. Participants will be asked to formulate the questions in a generic rather than specific ways. The answers provided will offer some guidance and general suggestions that will also be non-specific.

***MEET THE EXPERTS: PSYCHOSOCIAL INTERVENTIONS**

Chair: Brooke Molina, University of Pittsburgh

Presenters:

Brooke Molina, University of Pittsburgh

Mary Solanto, Hofstra-Northwell School of Medicine

Emma Sciberras, Deakin University

Mike Manos, Cleveland Clinic Children's, Cleveland Clinic

Overall Description:

This Session provides participants with the opportunity to ask questions of three master clinician experts in ADHD concerning ADHD and its diagnosis and management. The Chair will encourage discussion not only among panel members but also among clinician participants in the audience.

***E-POSTER GALLERY**

6:00 PM – 7:30 PM

Join us for an interactive poster session as presenters video chat with attendees to discuss their science, enjoy pre-recorded segments of their posters and utilize a discussion forum for engaging questions with presenters.

Saturday, January 16, 2021

PLENARY SESSION: *ADHD PARENT TRAINING AND PARENTING DURING COVID-19

8:00 A.M. - 9:30 A.M.

Chair: Brooke Molina, University of Pittsburgh

Behavioral Treatments for Children and Adolescents With Attention-Deficit/Hyperactivity Disorder: An Individual Participant Data Meta-Analysis

Saskia Van der Oord, KU Leuven

Disentangling Effective Components of Behavioral Parent Training Programs for Children With Attention-Deficit/Hyperactivity Disorder: Two Meta-Regression Analyses

Barbara van den Hoofdakker, University of Groningen, University Medical Center Groningen

Effectiveness of Specific Techniques in Behavioral Parent and Teacher Training for Childhood ADHD: Two Randomized Controlled Microtrials

Marjolein Luman, Vrije Universiteit Amsterdam

Psychosocial Effects of Homeschooling during the COVID-19 Pandemic in Families With ADHD and/or ASD

Lisa Thorell, Karolinska Institute

Overall Abstract:

Behavioral interventions for youth with attention-deficit/hyperactivity disorder (ADHD) effectively improve parenting and reduce child problems, although there is still room for improvement as effect sizes are moderate. Moreover, it is largely unknown what elements work within these behavioral interventions, and for which families these interventions are more or less effective. Knowledge on this is important to improve effectiveness, to tailor and provide treatments to specific groups and to guide the development of new treatments. This symposium, with research from the European PAINT (psychosocial ADHD Interventions) consortium, focuses on efforts to clarify what works for whom in behavioral treatment of children with ADHD and how treatments can be tailored to specific subgroups. The symposium includes studies using different methods to uncover these questions, amongst which micro-trials in which different elements of behavioral parent and teacher training are compared on daily rated problem behavior, meta-regression analyses in which it is explored which elements of behavioral parent and teacher training are related to child and parenting outcomes, and an individual participant data analysis (IPDMA). In this IPDMA (a

worldwide collaboration and data-sharing project), amongst 21 datasets containing 2,233 participants, moderators of behavioral treatment outcome are explored. This symposium gives clinicians and researchers clear indications of what elements of behavioral parent and teacher training are related to effectiveness and for whom behavioral interventions are more-or less effective. Also, the shift to homeschooling due to COVID-19 severely impacted the lives of parents of children with and without ADHD. This symposium also describes the impact of homeschooling in families of children with and without ADHD across 7 different countries in Europe.

Learning Objectives:

- Know components of behavioral parent training that are most effective for children with ADHD.
- Know the impact of COVID-19 on families homeschooling children with ADHD in multiple countries.
- Appreciate international perspectives on parenting and ADHD.

BREAK

9:30 A.M. - 9:45 A.M.

CONCURRENT SYMPOSIA

9:45 A.M. - 11:15 A.M.

****ASSESSING THE IMPACT OF STIMULANTS ON FUNCTIONAL OUTCOMES IN ADHD***

Chair: Joseph Biederman, Massachusetts General Hospital

A Literature Review and Meta-Analysis Examining the Effects of Medications for ADHD on Functional Outcomes

Ronna Fried, Massachusetts General Hospital & Harvard Medical School

Using a Text Messaging Intervention to Improve Adherence to Stimulants in Individuals With ADHD

Maura DiSalvo, Massachusetts General Hospital

Evidence of Low Adherence to Stimulant Treatment in Children & Adults With ADHD: An Electronic Medical Records Study

Joseph Biederman, Massachusetts General Hospital

Overall Abstract:

Despite strong clinical trial data documenting that stimulants are safe and highly effective in the treatment of ADHD and could help mitigate many of its adverse complications, non-adherence in ADHD is high. Our first speaker, Dr. Fried, will present our qualitative review and meta-analysis of literature examining the effect of pharmacological treatments for ADHD on various functional outcomes. Our qualitative review demonstrated a robust protective effect of ADHD medication treatment on mood disorders, suicidality, criminality, accidents and injuries, traumatic brain injuries, motor vehicle crashes, and educational outcomes. These findings support the literature that demonstrates adherence to ADHD medication treatment can reduce risk of the development and occurrence of certain functional outcomes. Our second speaker, Dr. Biederman, will present a study that evaluated rates and correlates of patient engagement to stimulant treatment in using data derived from electronic medical records (EMR) from a large healthcare organization. The analysis utilized a novel definition of patient engagement operationalized as a timely renewal of an index prescription using the electronically recorded issuance of a stimulant prescription in the EMR. Findings provide compelling new evidence of poor rates of patient engagement in stimulant treatment for ADHD calling for active efforts aimed at improving this state of affairs. Our third speaker, Ms. DiSalvo, will present the results of our novel disease management text messaging intervention aimed at improving adherence to stimulant medications in patients with ADHD. The intervention was piloted in patients treated at a large healthcare facility and comparators were matched from the EMR of the same facility. Results showed a significantly greater percent of the SMS intervention group refilled their prescriptions in a timely manner compared to patients receiving treatment as usual. Our findings showed that a novel ADHD-centric digital health intervention using SMS significantly improved the poor rate of adherence to stimulant treatment.

Learning Objectives:

- Participants will learn how untreated ADHD can affect functional outcomes.
- Participants will learn about how adherence to stimulants is particularly poor in the primary care setting.

INTERNATIONAL CONSENSUS STATEMENT: ADHD TREATMENT

Chair: Stephen Faraone, SUNY Upstate Medical University

Efficacy, Effectiveness, Tolerability and Safety of ADHD Medications

Samuele Cortese, University of Southampton

Identification and Treatment of Complex ADHD

Jeffrey Newcorn, Mount Sinai Medical Center

Non-Pharmacological Interventions for ADHD – A Snapshot of the Evidence

Edmund Sonuga-Barke, King's College London

Overall Abstract:

Misconceptions about attention deficit hyperactivity disorder (ADHD) stigmatize affected people, reduce the credibility of health care providers, and prevent or delay treatment of individuals challenged by the disorder. To challenge misconceptions, we have curated findings with a strong evidence base.

We systematically reviewed the literature for evidence-based statements about ADHD through expert scrutiny of published meta-analyses that assessed for publication bias and single studies with more than 2,000 participants. From this literature, we extracted evidence-based assertions about the disorder.

We generated 208 empirically supported statements about ADHD. The status of the included statements as empirically supported has been approved by the 77 authors from 27 countries and 6 continents. The contents of the manuscript have been endorsed by 356 people who have read this document and agree with its contents.

Many findings in ADHD are supported by meta-analysis or very large studies. These allow for firm statements about the nature, course, outcome causes, and treatments for the disorder that are useful for reducing both misconceptions and stigma.

Learning Objectives:

- Understand the Rationale for the International Consensus Statement.
- Understand the Process for creating the International Consensus Statement.
- Understand the best evidence for pharmacologic treatments for ADHD.
- Understand the best evidence for non-pharmacologic treatments for ADHD.

WHAT'S NEW IN THE PHARMACOLOGIC TREATMENT OF ADHD? DRUGS IN THE PIPELINE

Chair: Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

Co-Chair: Margaret Weiss, Cambridge Health Alliance

Kappa Opioid Receptor Antagonists and ADHD

Pradeep Bhide, Florida State University

Beyond Stimulants: New and Novel Medications in Clinical Development for ADHD

Greg Mattingly, St. Charles Psychiatric Associates

Stimulants in Development for the Treatment of ADHD: What's New and Different

Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

Overall Abstract:

Despite the marketing of a dozen new stimulant formulations for the treatment of attention-deficit/hyperactivity disorder (ADHD) in the past decade, unmet needs for patients with ADHD remain. Currently marketed drugs exert effects by enhancing catecholamine transmission. All have well-known adverse effects and the most commonly prescribed stimulant formulations have duration of effect of twelve hours, which is not sufficient to cover the full day. Adherence is a significant problem and the potential for abuse or diversion is also a particular concern. More than three dozen stimulants and nonstimulants are in the pipeline. These include prodrug stimulants, abuse deterrent stimulant formulations, chewable tablets, transdermally delivered stimulants, and stimulants with proposed duration of effect of greater than twelve hours. Nonstimulants include a serotonin (5-HT) norepinephrine (NE) modulating agent; several compounds targeting dopamine, NE and /or 5-HT; and a kappa opioid receptor antagonist that targets dopamine and NE.

This symposium will focus on drugs that have New Drug Applications (NDAs) filed and are presumably close to United States Food and Drug Administration approval, drugs in phase III trials and those with novel mechanisms of action (MOA) in early development. Compounds were identified through searches of PubMed, clinicaltrials.gov, and pharmaceutical company websites. Drug mechanism of action and available preclinical and clinical data will be presented. Potential clinical benefits of drugs in development will be discussed.

Learning Objectives:

- Understand what's new and different about drugs being developed compared to marketed formulations.
- Be able to discuss the unmet needs for patients with ADHD that investigational drugs have a potential to address.
- Understand the efficacy and safety data for drugs in the pipeline.

NEUROIMAGING INSIGHTS INTO DIVERSITY AND DEVELOPMENT OF ADHD

Chair: John Gabrieli, Massachusetts Institute of Technology

Brain Differences between Persistent and Remitted Attention Deficit Hyperactivity Disorder

John Gabrieli, Massachusetts Institute of Technology

Association of Intrinsic Brain Architecture With Changes in Attentional and Mood Symptoms During Development

Susan Whitfield-Gabrieli, Northeastern University

Generalizable Prediction of Mind Wandering from the Functional Connectome Across Healthy and ADHD Populations

Aaron Kucyi, Northeastern University

Dissociation of Working Memory Impairments and Attention-Deficit/hyperactivity Disorder in the Brain

Aaron Mattfeld, Florida International University

Overall Abstract:

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder that unfolds over development and that has considerable diversity in its presentation and course. The main objective of this symposium is to share insights from neuroimaging research, particularly functional magnetic resonance imaging (fMRI), about the brain bases for the development, and diversity of ADHD. In the first talk, John Gabrieli (MIT) will review functional brain differences between adults, all of whom were diagnosed with ADHD in childhood, who persist or remit from the diagnosis in adults. These findings provide a neurobiological distinction for the diagnosis of ADHD among adults with a childhood history of ADHD. In the second talk, Aaron Mattfeld (Florida International University) will review behavioral and neuroimaging evidence for diversity of executive function and dysfunction in adult ADHD, with some ADHD adults exhibiting deficits and other ADHD adults being indistinguishable from adults with no history of ADHD. In the third talk, Aaron Kucyi (Northeastern University) will review brain network-based markers of state and trait mind wandering in healthy and ADHD populations. These neuroimaging findings are clinically relevant because of evidence that more severely impaired executive function or more frequent mind wandering is associated with worse outcomes in ADHD. Finally, Susan Whitfield-Gabrieli will review longitudinal neuroimaging evidence that functional connectivities derived from resting-state fMRI at age 7 predict, in different neural networks, the progression of attentional or mood symptoms associated with ADHD or major depressive disorder (MDD) at age 11. These findings encourage consideration of early identification and possibly preventive treatment for ADHD and MDD.

Learning Objectives:

- The participant shall be able to understand how neuroimaging relates to the development of ADHD.
- The participant shall be able to understand how neuroimaging relates to heterogeneity in adult ADHD.

***PRESIDENTIAL ADDRESS: STATE OF APSARD BY DR. JEFFREY NEWCORN**

11:15 A.M. - 11:45 A.M.

Join us as APSARD President, Dr. Jeffrey Newcorn looks back on APSARD the past year and enlightens us for what is to come.

***SPECIAL PLENARY: TOBIAS BANASCHEWSKI**

Longitudinal Evidence for Predictive Socioenvironmental and Neurobehavioral Resilience Patterns

**not available for APA and ASWB credits*

11:45 A.M. - 12:30 P.M.

Chair: Jeffrey Newcorn, Mount Sinai Medical Center

Presenter: Tobias Banaschewski, Central Institute of Mental Health

Overall Abstract:

The consequences of the contact ban during the COVID-19 pandemic on well-being and mental health are still unclear with first findings of elevated levels of stress and increased psychopathology. Therefore, this study investigated protective factors during COVID-19 in the framework of a longitudinal study (n=70). Using ambulatory assessments before and during the pandemic, our findings suggest a time-dependent moderation of the affective benefit of real-life and real-time social contacts by amygdala volume, neuroticism, and polygenic risk for schizophrenia. In light of neurobiological predictors of stress reactivity, increased prefrontal control as measured before the pandemic predicted reduced physical and mental health impairments during the crisis. Specifically, prefrontal regulation during emotion processing predicted stress burden at the beginning of the crisis, whereas prefrontal activity during inhibitory control predicted burden later during the pandemic.

Our results highlight the protective effects of the social environment dependent on a neurobiobehavioral resilience profile and suggest a key role of prefrontal regulation buffering stress during the COVID-19 pandemic. These findings may inform future prevention strategies fostering stress coping in unforeseen situations.

Learning Objectives:

- Attendees will appreciate that differences in individual psychological characteristics affect momentary well-being during a pandemic.
- Attendees will appreciate that neurobiological characteristics may be associated with different profiles of risk and protection with regard to momentary well-being during the Covid-19 pandemic.

BREAK/LUNCH/EXHIBITOR NETWORKING

12:30 P.M. – 2:15 P.M.

*INDUSTRY SPONSORED SYMPOSIA: SUPERNUS

An Evaluation of SPN-812 (Viloxazine Extended-Release) in the Treatment of Pediatric Patients with ADHD: From Mechanism to Efficacy

1:15 P.M. - 2:15 P.M.

Chair: Jeffrey Newcorn, Mount Sinai Medical Center

Presenters:

Stephen V. Faraone, SUNY Upstate Medical University

Vladimir Maletic, University of South Carolina School of Medicine

Frank Lopez, Arnold Palmer for Children and Women/Orlando Regional Healthcare System

Overall Abstract:

SPN-812 (viloxazine extended-release) is a novel non-stimulant medication currently under review by the FDA for the treatment of pediatric patients with ADHD. Phase 3 studies have shown SPN-812 to be well tolerated and to significantly reduce ADHD symptoms in children and adolescents ages 6 to 17 years with ADHD. This program will present preclinical data describing the multimodal effects of viloxazine on noradrenergic and serotonergic systems as well as post-hoc analyses elucidating the clinical significance of the phase 3 data, including predictors of efficacy by week 6, translating ADHD-RS-5 Total scores into CGI clinical significance, and measures of clinical relevance estimating the potential clinical impact of SPN-812 treatment on patients with ADHD.

Learning Objectives:

- Review preclinical evidence describing the multimodal effects of viloxazine on noradrenergic and serotonergic systems.
- Describe the efficacy, safety, and tolerability profile of viloxazine extended-release established in four phase 3 studies in patients ages 6 to 17 years with ADHD.
- Report post hoc data analyses results describing the clinical significance of the following:
 - Likelihood of early response to predict efficacy outcome at week 6
 - Linking analysis for determining clinical significance (increased CGI-I scores versus decreased ADHD-RS-5 Total scores)
 - Numbers Needed to Treat (NNT), Numbers Needed to Harm (NNH), and Likelihood to Help or Harm (LHH) analyses to evaluate clinical effectiveness

PLENARY SESSION: *NEUROIMAGING IN ADHD: WHERE IS IT GOING?*

2:15 P.M. - 3:45 P.M.

Chair: Steven Pliszka, UT Health Science Center at San Antonio

Brain Imaging in ADHD: A Perspective from the ENIGMA ADHD Working Group and Beyond

Barbara Franke, Radboud University Medical Center

Neuroimaging in ADHD: Insights from Large Longitudinal Cohorts

Hugh Garavan, University of Vermont

The Future of Neuromarkers for ADHD and Beyond: Opportunities and Challenges

Tor Wager, Dartmouth College

Overall Abstract:

Each year more neuroimaging data emerges with regard to ADHD and other psychiatric conditions. The Adolescent Brain Cognitive Development (ABCD) and ENIGMA ADHD study have obtained scans on thousands of children and adolescents along with detailed psychological and social data. What these studies are telling us about the development of attention/impulse in children and about brain involvement in ADHD? What does it mean when imaging studies have small effect sizes that are nonetheless statistically significant? How should clinicians interpret such findings? How does heterogeneity of findings effect these considerations? How will machine learning/AI shape this research in the future? Will neuroimaging ever be clinically useful in the near future. Investigators from ABCD, ENIGMA-ADHD and the field of machine learning will give an overview of their work and seek to answer these questions. This session is designed to be accessible to a clinical audience.

Learning Objectives:

- Understand recent developments in the neuroimaging of ADHD, particularly the role of "Big Data" studies.
- Discuss recent finding with regard to ADHD from the ENIGMA and ABCD studies.
- Understand the future role of neuroimaging in ADHD research and how neuroimaging might be clinically useful.

COFFEE BREAK

3:45 P.M. - 4:00 P.M.

CONCURRENT SYMPOSIA

4:00 P.M. - 5:30 P.M.

CLINICAL, NEUROBIOLOGICAL, AND OTHER RISK INDICATORS OF MOOD DISORDER DEVELOPMENT IN CHILDREN

Chair: Mai Uchida, Massachusetts General Hospital

Early Clinical Predictors of Diagnosis and Morbidity in Major Affective Disorders

Giulia Serra, I.R.C.C.S. Children Hospital Bambino Gesù, Rome

Can Machine Learning Help Identify Childhood Risk Indicators of Future Development of Bipolar Disorder?

Qasim Bukhari, Massachusetts Institute of Technology

Evidence of Neural Biomarkers to Differentiate Pediatric Depression from Pediatric Bipolar Disorder

Yuwen Hung, McGovern Institute for Brain Research, MIT

Subsyndromal Manifestations of Depression in Children Predict the Development of Major Depression

Mai Uchida, Massachusetts General Hospital

Overall Abstract:

Pediatric ADHD is a known risk factor for future development of mood disorders, making it important for clinicians to be able to identify early predictors for risk factors associated with mood disorders in this population. We will present on clinical indicators of the future development of mood disorders, neural underpinnings associated with risks of unipolar depression and bipolar disorder, and a machine learning prediction model trained to identify predictors of future development of bipolar disorder in children.

Learning Objectives:

- Identify the clinical indicators of risk for the development of pediatric mood disorders.
- Articulate differing techniques, such as neuroimaging and machine learning, to identify, predict, and differentiate risk for pediatric bipolar disorder and major depressive disorder.

****TRANSDIAGNOSTIC MARKERS IN SUICIDALITY WITH IMPLICATIONS FOR ADHD***

Chair: Martin Katzman, START Clinic for Mood and Anxiety Disorders

Impulsivity in Suicidality and Its Implications for ADHD

David Sheehan, University of South Florida College of Medicine

Anhedonia in the Clinical Setting: Diagnostic and Treatment Implications for Comorbid Mood and Anxiety Disorders and Adult ADHD

Tia Sternat, START Clinic for Mood and Anxiety Disorders

Underlying Neurobiological Mechanisms Linking Treatment-Resistant Depression and Anxiety, Suicide and ADHD

Martin Katzman, START Clinic for Mood and Anxiety Disorders

Overall Abstract:

Overlapping symptomatology in patients with co-morbid mood and anxiety disorders is common within clinical settings. Thus, early and accurate detection of the origin of all symptoms is necessary in order to provide patients with a comprehensive, personalized treatment plan that is directed at managing all the co-morbidities for a maximal likelihood of remission and recovery.

Attention Deficit Hyperactivity Disorder (ADHD) is common co-morbid condition, which may be understood as more of a pre-morbidity, as it may create a very different pathway to the very heterogeneous clinical populations of mood and anxiety disorders. As a result, presentations with ADHD and related comorbidities require very specialized treatment approaches.

Nonetheless, despite the high prevalence of co-morbidity in what is often identified as distinct presentations of mood and anxiety disorders, diagnoses and treatments in adult populations who are suffering from complex mood and anxiety disorders often fail to recognize and consequentially treat undiagnosed, pre-morbid ADHD. Treatment-resistance and poor outcomes remain too common within psychiatry and a comprehensive understanding must be pursued in order to mitigate these results.

In much the same way suicidality, often seen as a homogenous and horrific outcome, must also be understood as driven through a variety of heterogenous pathways. As such, focusing on the various transdiagnostic factors may allow for targeted approaches for primary and secondary prevention. It is therefore imperative to determine predictive factors that may aid in separating the subtypes of mood and anxiety disorders and indeed suicidality, with a specific focus on ADHD as an independent target to enhance patient outcomes in those suffering with complex mood and anxiety disorders.

This symposium will review the clinical challenges that exist in this comorbid clinical population of patients presenting with ADHD symptomatology. The use of trait (low hedonic tone) versus state anhedonia as a predictor of detecting ADHD in patients will be discussed.

The neurobiological correlates associated with ADHD and associated comorbid mood and anxiety disorders, as well as their impact on one's functioning will be reviewed as a way to understand the presentations of patients with ADHD and suicide, mood, and anxiety co-morbidities.

Learning Objectives:

- Understand the current epidemiology of mood and anxiety disorders with comorbid ADHD and their impact on patient outcome.
- Recognize the neurobiological correlates of comorbid mood and anxiety disorders with ADHD and their resulting effect on cognitive functioning.
- Identify predictive factors, specifically trait vs. state anhedonia, as a method in subtyping mood and anxiety disorders with ADHD.

ARE SECONDARY OUTCOMES PRIMARY?

Chair: Margaret Weiss, Cambridge Health Alliance

Co-Chair: Mark Stein, University of Washington

Long Term Outcomes Related to ADHD Pharmacotherapy

Timothy Wilens, Massachusetts General Hospital

Unraveling the Interactions Between Primary and Secondary Outcomes in ADHD

David Coghill, University of Melbourne

Functional Outcomes: From Research to Practice

Margaret Weiss, Cambridge Health Alliance

Overall Abstract:

Patients present because of distress, development delays, or functional impairment. Our approach to assessment attempts to determine whether psychiatric diagnoses, or symptoms, are contributing to the patient's concern. We have come to refer to symptoms as 'primary outcomes' and function and quality of life as 'secondary outcomes'. Our symposium challenges that assumption: symptoms may be a proxy tool for the clinician to ultimately target the patient's functional concerns. Dr. Wilens provides a review suggesting that contrary to common perception we now have studies that provide an empirical base for demonstrating the impact of stimulants on long term functional outcomes. Dr. Coghill presents research on the correlation between symptom, function, and quality of life outcomes with medication. Dr. Weiss looks at data on functional outcome in stimulant trials, measurement of functional impairment by parent and self-report in adolescence, and practical strategies for documenting this information so as to incorporate function as an outcome in clinical practice. We argue that both in research and in practice, assessment of symptoms is necessary but not sufficient to understand patient response to treatment. Rigorous empirical assessment

of improvement and/or remission of functional impairment clarifies the extent to which treatment has met the patient's objectives. Moving towards a revised paradigm that identifies change in function and well-being as primary has the potential to improve clinical care and patient engagement. This change in clinical practice and in research would allow us to identify how improvement of function in the short term, can lay the foundation for improvement of function in the long term.

Learning Objectives:

- Identify the empirical evidence supporting significant beneficial long-term outcomes of stimulants.
- Compare symptoms, function, and quality of life outcomes as distinct but interconnected outcomes which vary with different ADHD medications.
- Incorporate strategies for assessment of function in clinical practice including identification of improvement vs. remission, use of adolescent self vs. parent report, and tools for documentation of functional response in the medical record.
- Integrate a more patient centered approach which conceptualizes ADHD symptom response as the vehicle or proxy to improved well-being and function.

****STIMULANT MISUSE AND DIVERSION BY YOUNG PEOPLE: ASSOCIATED FACTORS AND POTENTIAL INTERVENTION AND PREVENTION APPROACHES***
Chair: Brooke Molina, University of Pittsburgh

Stimulant Diversion Prevention Strategies in Pediatric Primary Care and Correlates of Provider Strategy Use
Elizabeth McGuier, University of Pittsburgh

Self-Reported ADHD Symptoms Predict Microdosing Hallucinogen Frequency Among Those Academically Dissatisfied
Victoria Szydowski, University of Washington

Project PHARM: A Brief Intervention to Reduce Non-Medical Use of Prescription Stimulants
Jason Kilmer, University of Washington School of Medicine

Stimulant Diversion Risk and Prevention Among Adolescents Treated for ADHD in Pediatric Primary Care
Brooke Molina, University of Pittsburgh

Overall Abstract:

Much remains to be understood about non-medical use of ADHD stimulant medications. The objective of this symposium is to describe findings from two studies addressing non-medical use from different, yet complementary approaches. Dr. Jason Kilmer will describe data from Project PHARM – a multi-campus study addressing non-medical stimulant use at nine U.S. colleges and universities. He will present perceived normative levels of non-medical stimulant use by students and initial efficacy of a web-based personalized feedback intervention for 735 students with prior non-medical stimulant use. Ms. Victoria Szydowski will present microdosing of hallucinogens by Project PHARM participants at 6-month follow-up as a function of baseline ADHD symptoms and academic satisfaction. Non-medical stimulant users often report substance use, yet little is known about this emerging substance use behavior. Dr. Brooke Molina will present data from a cluster-randomized controlled trial (RCT) of pediatric practice training in stimulant diversion prevention. The study results from prior evidence that stimulants for non-medical use are acquired mostly from peers. Drawing from a conceptual model of diversion risk, Dr. Molina will describe risk for diversion among the adolescent patient participants in the study, n=357, and factors associated with being approached to divert, treatment disclosure (to others) and intent to divert. Initial results of the RCT will also be provided as well as provider satisfaction. Using data from this RCT, Dr. Elizabeth McGuier will describe pediatric primary care provider (n=76) reports of diversion prevention strategy utilization at baseline and associated barriers and facilitators that may need to be addressed to support implementation. Together, these four presentations will provide new knowledge about factors that contribute to non-medical stimulant use by college students and adolescents as well as intervention and prevention strategies developed to reduce diversion and non-medical use.

Learning Objectives:

- Participants will be able to describe misperceptions and behaviors by college students that relate to their non-medical use of stimulants.
- Participants will be able to describe factors associated with stimulant diversion risk by adolescent patients stimulant-treated for ADHD.
- Participants will be able to describe potential interventions for reducing misuse and diversion of stimulants by young people.

Sunday, January 17, 2021

CLOSING PLENARY: *INVESTIGATING CAUSES, CONSEQUENCES AND TREATMENT OF ADHD USING BIG DATA

8:00 A.M. - 9:30 A.M.

Chair: Jeffrey Newcorn, Mount Sinai Medical Center

Treatment for Attention Deficit Hyperactivity Disorder (ADHD) and the Risk of Poisoning in Children and Adolescents - Hong Kong Healthcare Big Data Analysis

Ian Wong, University of Hong Kong

Environmental and Genetic Risk Factors for ADHD

Soren Dalsgaard, National Centre for Register-based Research, Aarhus University

Registry-Based Studies of Educational and Occupational Outcomes in ADHD

Henrik Larsson, Örebro University

Overall Abstract:

There has been considerable progress over the last several years in understanding the risk factors, functional consequences and impact of treatment of ADHD from large data bases, including national registries and other large-scale methods of tracking population trends. These observational studies have offered some of the most powerful data regarding the functional consequences of ADHD and the impact of medication treatment.

To present “big data” studies of environmental and genetic risk factors, educational and occupational outcomes, and risk of poisoning associated with ADHD.

The presenters are all internationally acclaimed researchers. 1) Soren Dalsgaard will present data on environmental risk factors obtained from nationwide registries and genetic data from the Danish population-based case-cohort sample iPSYCH. He concludes that while ADHD is highly heritable, several environmental factors are also associated with the disorder. 2) Henrik Larsson used Swedish population registers to obtain information about clinically diagnosed ADHD, educational outcomes, occupational outcomes as well as psychiatric comorbidity. He concludes that the educational and occupational burden associated with ADHD is substantial, comorbidity has an important role in moderating outcome, and medication can positively impact educational outcomes. 3) Ian Wong examined the association of methylphenidate (MPH) prescription and incident poisoning diagnosis in youth ascertained from the Hong Kong Clinical Data Analysis and Reporting System. He concludes that there is not an association between methylphenidate treatment and increased risk of poisoning.

The three presentations in this session extend the data base on less often discussed risk factors and outcomes of ADHD and its treatment and represent important additions to the empirical data base for this disorder.

Learning Objectives:

- Attendees will appreciate the important role of big data in advancing our understanding of risk factors for, and outcomes of, ADHD and its treatment.

- Attendees will appreciate that ADHD has potentially serious consequences, and that treatment can help to safely mitigate these outcomes.

BREAK

9:30 A.M. - 9:45 A.M.

CONCURRENT SYMPOSIA

10:00 A.M. - 11:30 A.M.

NON-MENTAL COMORBIDITY OF ADHD ACROSS THE LIFESPAN: FROM PHENOTYPE TO BIOLOGICAL MECHANISM

Chair: Barbara Franke, Radboud University Medical Center

Non-Mental Comorbidities in ADHD: Fidgety Philipp and Pippi Longstocking at Risk of Multimorbidity?

Sarah Kittel-Schneider, University Hospital of Frankfurt

Associations Between ADHD and Physical Disorders: A Large-Scale Genetically Informed Swedish Register Study

Ebba Du Rietz, Karolinska Institute

Biological Mechanisms Implicated in Non-Psychiatric Comorbidities of ADHD

Nina Roth Mota, Radboud University Medical Center

Overall Abstract:

There is increasing evidence that ADHD frequently co-occurs with non-mental conditions. Understanding the nature of these comorbidities is pivotal to providing better diagnosis and care for individuals with ADHD, from young to old age. This symposium will present evidence for phenotypic associations, genetic and environmental risk factors, and neurobiological pathways ADHD of non-mental comorbidities, across the lifespan.

We will discuss findings on associations between ADHD and non-mental conditions, based on literature research. Second, we will present epidemiological findings on associations and genetic and environmental risk factors using large-scale data (N>4 million) from Swedish Population Registries. Third, we will present gene-based meta-analytic research on genome wide association studies (GWAS) from large-scale international datasets such as iPSYCH, UKBiobank and PGC.

Literature research has shown that epilepsy, migraine, elimination disorders, and obesity are likely true comorbidities of ADHD. Epidemiological research indicates that having ADHD increases the risk of multiple non-mental diseases. For several

associations, this is to a large extent explained by shared genetic factors, while other associations are likely related to lifestyle factors more frequent in those with ADHD. Genetic pathways underlying the comorbidity of ADHD with non-mental conditions can be identified through large-scale cross-disorder genome-wide association study meta-analyses. Those studies show that e.g. genes related to dopaminergic neurotransmission are important for the overlap between ADHD and BMI/obesity, and that genes relevant to insulin signaling are relevant for the comorbidity of ADHD with diabetes mellitus type 2.

Individuals with ADHD are at high risk of developing non-mental comorbidities that contribute to disease burden across the entire lifespan. There is yet insufficient knowledge about such comorbidities and their biological underpinnings, especially in the field of ADHD in the ageing population. Studying genetic associations and lifestyle factors in ADHD can aid the identification of the underlying biological mechanisms.

Learning Objectives:

- The participant shall be able to recognise the prevalence of non-mental comorbidities in ADHD across the lifespan.
- The participant shall be able to appreciate the roles of shared genetic risk factors and lifestyle factors in the comorbidity of ADHD with non-mental conditions.
- The participant shall be able to understand how research into the shared genetic risk factors for ADHD and several comorbidities can be performed.

****ADHD AND ADDICTIVE BEHAVIORS***

Chair: Frances Levin, Columbia University Irving Medical Center

ADHD, Cannabis Use Disorder and Sleep Problems: Etiology and Treatment

J.J. Sandra Kooij, PsyQ, Program Adult ADHD, The Hague

Cognition and Sex as Predictors for Substance Use and Gaming Disorders in ADHD: New Findings and Clinical Relevance

Annabeth Groenman, Accare Centre for Child and Adolescent Psychiatry, University Medical Centre Groningen

ADHD, Gambling, and Gaming: Epidemiology and Treatment

Zsolt Demetrovics, ELTE Eötvös Loránd University

Overall Abstract:

In this symposium we present reviews and new data on the important comorbidity of ADHD and addictive behaviors, including both substance use disorder, gaming, and gambling.

In the first talk, Dr. Annabeth Groenman (Amsterdam, The Netherlands) will present neurocognitive and neuroimaging data on the role of cognitive deficits and reward processing abnormalities in the development of substance use disorders (SUDs) in adolescents with ADHD and she will discuss the consequences of these findings for the prevention of SUDs in children with ADHD.

In the second talk, Dr. Zsolt Demetrovics (Budapest, Hungary) will present a review and new data on the epidemiology of the comorbidity of ADHD with gambling and gaming disorders. He will also discuss the evidence of currently available treatments for these patients.

In the third talk, Dr. Kooij (The Hague, The Netherlands) will present the co-occurrence of ADHD, cannabis use (disorder) and sleep problems and potential treatments for this complex group of mainly young adult patients.

Finally, Dr. Wim van den Brink (Amsterdam, The Netherlands), co-founder and president of the International Collaboration on ADHD and Substance Abuse (ICASA) will discuss these presentations and place them in an international perspective.

Learning Objectives:

- Have a clear understanding regarding the (sex-specific) role of cognitive and reward problems of children with ADHD as risk factors for the development of addictive disorders and the relevance for the prevention of addictive disorders in children with ADHD.
- Know the magnitude of gambling and gaming disorders in patients with ADHD and know how to treat patients with this common comorbidity.
- Know how to treat sleeping disorders in patients with ADHD and comorbid cannabis use (disorder).

PREVALENCE OF ADHD IN HIGH RISK CHILDREN WHOSE PARENTS HAVE ADHD

Chair: Mai Uchida, Massachusetts General Hospital

Paternal Parenting and Behavior of Young Children Born to Fathers With Childhood ADHD

Heather Joseph, University of Pittsburgh

Combining, Sequencing and Personalizing Behavioral and Pharmacological Treatment for Parent and Child ADHD

Andrea Chronis-Tuscano, University of Maryland

*High Risk for ADHD Among Children of Parents With Childhood Onset of the Disorder:
A Pilot Study*

Joseph Biederman, Massachusetts General Hospital

Assessing the Magnitude of Risk of ADHD in Offspring of Parents With ADHD

Mai Uchida, Massachusetts General Hospital

Overall Abstract:

Parents with ADHD are highly likely to have children with ADHD as well. We will present on the high heritability of this link. We will discuss evaluating the familial nature of adult ADHD is through a high-risk design aimed at estimating the risk for the disorder in children of parents with childhood-onset ADHD. Specifically, given the greater prevalence of ADHD in males, we will discuss offspring of fathers with and without ADHD histories for ADHD and disruptive behavior and compared fathers' parenting behaviors.

Learning Objectives:

- Understand the prevalence of risk of ADHD in the children of parents with ADHD.
- Identify the differences in parenting on the paternal side versus the maternal and its importance to children with and without ADHD.

BREAK

11:30 A.M. - 11:40 A.M.

***MEET THE APSARD LEADERSHIP**

11:40 A.M. - 12:40 P.M.

Join us for this unique opportunity to meet with APSARD leadership and ask them advice, questions, and guidance in your practice. This session will run like a roundtable where attendees get to select the leader's session they would like to attend. Leaders included:

- **President: Jeffrey Newcorn, MD**
Mt. Sinai Medical Center
- **President-Elect: Ann Childress, MD**
Center for Psychiatry & Behavioral Medicine, Inc.
- **Immediate Past President: Joseph Biederman, MD**
Massachusetts General Hospital
- **Treasurer: Tanya Froehlich, MD**
Cincinnati Children's Hospital
- **Secretary: David Goodman, MD**
Johns Hopkins School of Medicine
- **Program Committee Chair: Steven Pliszka, MD**
University of Texas, San Antonio

BREAK

12:40 P.M. - 1:30 P.M.

CONCURRENT SYMPOSIA

1:30 P.M. - 3:00 P.M.

INTERNATIONAL CONSENSUS STATEMENT: ADHD NEUROBIOLOGICAL AND NEUROPSYCHOLOGICAL MODELS

Chair: Stephen Faraone, SUNY Upstate Medical University

Overview of the International Consensus Statement on ADHD

Stephen Faraone, SUNY Upstate Medical University

Neuroimaging of ADHD

Katya Rubia, King's College London

Update on the Neuropsychology of ADHD: Insights from the International Consensus Statement (ICS)

Mark Bellgrove, School of Psychological Sciences, Turner Institute for Brain and Mental Health, Monash University

Overall Abstract:

Misconceptions about attention deficit hyperactivity disorder (ADHD) stigmatize affected people, reduce the credibility of health care providers, and prevent or delay treatment of individuals challenged by the disorder. To challenge misconceptions, we have curated findings with a strong evidence base.

We systematically reviewed the literature for evidence-based statements about ADHD through expert scrutiny of published meta-analyses that assessed for publication bias and single studies with more than 2,000 participants. From this literature, we extracted evidence-based assertions about the disorder.

We generated 208 empirically supported statements about ADHD. The status of the included statements as empirically supported has been approved by the 77 authors from 27 countries and 6 continents. The contents of the manuscript have been endorsed by 356 people who have read this document and agree with its contents.

Many findings in ADHD are supported by meta-analysis or very large studies. These allow for firm statements about the nature, course, outcome causes, and treatments for the disorder that are useful for reducing both misconceptions and stigma.

Learning Objectives:

- Understand the rationale for the International Consensus Statement.
- Understand how the International Consensus Statement was created.
- Understand the evidence about Neurobiological Models of ADHD.
- Understand the evidence about Neuropsychological Models of ADHD.

FAMILIAL RISK FOR ADHD IN INFANCY AND TODDLERHOOD

Chair: Heather Joseph, University of Pittsburgh

Co-Chair: Meghan Miller, University of California, Davis MIND Institute

Stress, Sleep, and Parenting Satisfaction: The Impact of ADHD on New Parents

Heather Joseph, University of Pittsburgh

Cytokine and Fatty Acid Concentrations in Pregnant Women With and Without ADHD: Effects on Child Risk for ADHD

Hanna Gustafsson, Oregon Health & Science University

ADHD-Relevant Behaviors Are Evident by 18 Months of Age Among Infants Developing Risk for ADHD

Meghan Miller, University of California, Davis MIND Institute

Altered Theta Beta Ratio in Infancy Associates With Later ADHD Traits

Emily Jones, Birkbeck, University of London

Overall Abstract:

Identification of modifiable environmental factors and early signals of risk for later development of ADHD in infancy and toddlerhood--the period of greatest brain plasticity--are important for developing early interventions to decrease the prevalence of ADHD and reduce associated impairments. This symposium will present findings from four unique prospective cohorts that aim to identify novel factors associated with the familial transmission of ADHD, and early signals of risk in infants and toddlers at familial risk for developing ADHD. First, Heather Joseph will consider the impact of parental ADHD on parenting stress, sleep, and parenting satisfaction among new parents with ADHD and their co-parent. Next, Hanna Gustafsson will examine differences in cytokine and fatty acid concentration among pregnant women with and without ADHD and the effects on infant temperament and the development of ADHD symptoms at preschool age. Meghan Miller will then present trajectories of behaviors among infants and toddlers at high or low familial risk for ADHD. Finally, Emily Jones will evaluate oscillatory EEG profiles in infants a high and low risk for developing ADHD. These presentations will provide new insights into potential intervention targets to reduce the familial transmissions of ADHD as well as markers of greatest risk in infancy that may be used to identify children who would most benefit from such interventions.

Learning Objectives:

- Attendees will be able to describe behavioral and biological differences among new parents with and without ADHD.
- Attendees will be able to describe differences in behavior and neural activity in infants at high and low familial risk for ADHD.

GUIDELINES: WHAT ARE THEY GOOD FOR?

Chair: Russell Schachar, The Hospital for Sick Children

Guideline Dissemination and Implementation

Jeremy Grimshaw, Ottawa Health Research Institute

Clinical Practice Guidelines: The AACAP Experience 30 Years On.

Oscar Bukstein, Children's Hospital Boston

A Systematic Review of Clinical Practice Guidelines for Children and Youth with Externalizing Behavior Disorders

Brendan Andrade, Centre for Addiction and Mental Health, University of Toronto

Pediatric ADHD: A Tale of Two Guidelines

Tanya Froehlich, Cincinnati Children's Hospital Medical Center

Overall Abstract:

Clinical practice guidelines are systematically developed statements designed to support practitioners in decision making and reduce variation in care leading to better, timelier, and more effective outcomes. Multiple guidelines exist for assessment and treatment of ADHD in children and adults. In general, guidelines vary in their coverage, rigor of their development, ease of implementation, and the extent to which they have been treated as requirements rather than recommendations. The symposium will review general issues pertaining to guidelines (e.g. feasibility of implementation, effectiveness) and specific issues pertaining to ADHD guidelines. Attendees will gain an appreciation of the criteria for quality guidelines and their usefulness and potential limitations.

Learning Objectives:

- After attending this symposium, attendees will be able to list 5 criteria for quality guidelines and apply them to existing guidelines.
- After attending the symposium, attendees will be able to itemize advantages and disadvantages of practice guidelines.
- After attending the symposium, attendees will be able to appreciate how practice guidelines could influence the care that they provide.

IMPROVING OUTCOMES FOR COLLEGE STUDENTS WITH ADHD

Chair: Kevin Antshel, Syracuse University

Helping College Students With ADHD SUCCEED: A Comprehensive Care Model

Michael Meinzer, University of Illinois at Chicago

Parental Scaffolding, Relationship With Parents, and Adjustment in College Students With High and Low ADHD Symptoms

Anne Stevens, University of Illinois At Chicago

Organization, Time Management, Planning, and Study Skills Intervention to Help Students With ADHD Thrive in College

William Canu, Appalachian State University

Primary Prevention Intervention to Reduce Stimulant Medication Misuse in College Freshmen

Kevin Antshel, Syracuse University

Overall Abstract:

College students with ADHD are increasing in prevalence and experience different stressors than same-age peers with ADHD who do not pursue college. Existing services on college campuses are often ill-equipped to assist students with ADHD. To better understand this ADHD subpopulation and improve outcomes, this symposium aims to provide the audience with state-of-the art knowledge about how best to support college students with ADHD by covering the following topics: (a) outcome data supporting the efficacy of a comprehensive care model for college students with ADHD (Students Understanding College Choices: Encouraging and Executing Decisions for Success; SUCCEEDS – Michael Meinzner, PhD); (b) data regarding parental involvement, the parent-child relationship and outcomes related to the transition to college – Anne Stevens, PhD; (c) outcome data from a primary prevention intervention to reduce stimulant medication misuse in college freshmen – Kevin Antshel, PhD; and (d) multi-site treatment outcome data from an Organizational, Time Management and Planning intervention – Will Canu, PhD.

Learning Objectives:

- Participants will learn about the range of evidence based psychosocial interventions that are available to college students with ADHD.
- Participants will learn about moderators and mediators of evidence based psychosocial interventions for college students with ADHD and have an understanding of what works best for whom.