ACADEMIC
PSYCHIATRY SYMPOSIUM

Abstract Book

VUMC Department of Psychiatry & Behavioral Sciences

friday june 17, 2022

Plenary Speaker

AlvinC. Powers,MD

Joe C. Davis Chair in Biomedical Science
Professor of Medicine, Molecular Physiology and Biophysics
Director, Vanderbilt Diabetes Center
Chief, Division of Diabetes, Endocrinology, and Metabolism
Vanderbilt University Medical Center

Multi-variable equations, dominos (not the pizza), and boats:
some thoughts about science and medicine (connections, collaborations, etc.)

This activity is sponsored by the Luton Lecture Fund Department of Psychiatry and Behavioral Sciences. This educational activity received no commercial support.

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For CME/CE information about this session, please visit https://vumc.cloud-cme.com/course/courseoverview?P=0&EID=53525

Welcome

From the APS Organizing Committee

Welcome to the 2022 Academic Psychiatry Symposium (APS)! We are delighted that we will meet in person (albeit suitably masked) for the first time in the three years it has been held, and hope that you will enjoy yourself.

The theme of this year's APS is interaction in science. The depiction of scientists in old movies as recluses with hair askew and odd or worse mannerisms has given way to the reality of science as an interactive enterprise involving people from diverse backgrounds and perspectives, each of whom contributes based on their own expertise and skills. This will be apparent as you listen to talks and look at posters, and as you hear the keynote address by Dr. Alvin Powers, who is both a superb researcher and clinician and also an entertaining and informative speaker.

Finally, the APS wishes to note the contributions of the fourth year residents. They will be presenting their own work in the first oral session and the first poster session. Congratulations to the PGY4 class and best wishes and success on their journeys.

This year's APS will take place in the Vanderbilt Psychiatric Hospital, with oral presentations (including the keynote address) in the Luton Room and the two poster sessions (with lunch and an ice-cream social) in the gym. Suggested routes between the Luton Room and gym are shown on the back cover of the abstract book.

Ariel Y. Deutch, PhD

M.E. Wood, PhD

Alan Lewis, MD, PhD

Jennye Laws-Woolf

Schedule

10:45-10:50am ..... **Welcome and Introduction**
Luton Lecture Hall, VPH 1206

10:50-12:00pm ..... **Oral Session #1 (PGY4s)**

12:00-1:00pm ..... **Plenary Session**

1:00-2:00pm ..... **Poster Session #1 and lunch**
VPH Gym

2:00-3:00pm ..... **Oral Session #2**
Luton Lecture Hall, VPH 1206

3:00-3:55pm ..... **Poster Session #2**
VPH Gym

3:55-4:00pm ..... **Closing Remarks**
VPH Gym

3:00-5:00pm ..... **Ice Cream Social on the lawn to honor Emeritus Professor Ariel Y. Deutch**

Acknowledgements

The Department of Psychiatry and Behavioral Sciences would like to acknowledge the following contributors whose work has been instrumental to the success of this year's Academic Psychiatry Symposium:

◊ **Aaron Howard and the BRET Office** for the use of today's poster stands

◊ **Maureen McHugo** for managing the abstract submission process

◊ **Cindie Johnson** for her help as the site coordinator on Friday June 17

Plenary Talk

Alvin C. Powers, MD
Joe C. Davis Chair in Biomedical Science
Professor of Medicine, Molecular Physiology and Biophysics
Director, Vanderbilt Diabetes Center

Multi-variable equations, dominos (not the pizza), and boats:

some thoughts about science and medicine (connections, collaborations, etc.)

Scientists and physicians are influenced both formally and informally by the communities in which they work (departments, centers, programs, professional societies, etc.). The presentation will provide examples of these concepts and discuss the vital and varied role of mentors in career development.

Alvin C. Powers, M.D., the Joe C. Davis Chair in Biologic Science and Professor of Medicine, Molecular Physiology and Biophysics at Vanderbilt, is the Chief of the Division of Diabetes and Director of the Vanderbilt Diabetes Research and Training Center, a NIH-funded center that facilitates the diabetes-related research of more than 140 Vanderbilt scientists. His research on type 1 and type 2 diabetes focuses on pancreatic islet biology, development, and function. Dr. Powers has worked to encourage medical and graduate student engagement in research and discovery, serving as the Director of the Vanderbilt Medical Student Research Training Program in Diabetes, Endocrinology, and Metabolism and the Founding Coordinator for the NIH/NIDDK Medical Student Research Program in Diabetes. Dr. Powers was elected to the Association of American Physicians and as a Fellow of the American Association for the Advancement of Science. He is the recipient of the David Rumbough Award for Scientific Excellence from the JDRF, the Banting Medal for Leadership and Service from the ADA, the Naomi Berrie Award for Outstanding Achievement in Diabetes Research from Columbia University, and the Outstanding Educator Award from the Endocrine Society. He served as President of Medicine & Science of the American Diabetes Association in 2017. Dr. Powers received his undergraduate degree from the University of Virginia and his medical degree from the University of Tennessee Center for the Health Sciences. After training in internal medicine at Duke, he trained in Endocrinology and Diabetes at the Joslin Diabetes Center, the Massachusetts General Hospital, and Harvard Medical School.

Presenters

Oral Session 1 — 10:50am

Brent Necaise, MD
Gender dysphoria: Diagnosis, treatments, and the role of the psychiatrist

Ryan Oakley, MD
Psychedelics and Psychedelic-like Medicines in Psychiatry: A Brief Overview and Recent Update On the Evidence

David Steadman, MD
Psychiatric comorbidities and psychopharmacological considerations in the treatment of the transgender and nonbinary population

India Reddy, MD, PhD
Identification of transdiagnostic childhood externalizing pathology within an electronic medical records database and pilot study of rare copy number variation

Poster Session 1 — 1:00pm

Poster	Presenter
1	**Yael Osman, MA** Differential diagnosis of anxiety disorders and posttraumatic stress disorder: Two clinical cases with a history of complex trauma
2	**Rachel Calvosa, BS** Relationship Between Parent-Reported Anxiety and Parent-Reported Sensory Sensitivity in Adolescent Females with and Without Autism Spectrum Disorder (ASD)
3	**Arielle Ered, MA** Exploring the relationship between childhood trauma exposure and neurocognitive performance in individuals with schizophrenia spectrum disorders
4	**Hannah Hyatt Hartnett, SSP, MEd** An exploration into the relationship between perception/metaperception and anxiety in individuals with autism spectrum disorder
5	**Jessica Schwartzman, PhD** Autism-adapted group Cognitive Behavioral Therapy for adolescent depression: Feasibility, acceptability, and preliminary efficacy
6	**Kendall Beals, BS** Emotional Awareness, Psychosis, and Childhood Trauma
7	**Edwin Williamson, MD** The Match at 70: What was, what is, and what could be

Poster Session 1 continued

Poster	Presenter
8	**Kimberly Hsiung, MD, MS** Teaching residents how to communicate involuntary commitment decisions to psychiatric patients: a quality improvement project
9	**Lee Dockery, MD** Evaluating the Demographics and Outcomes of a Hospital Misuse Protocol
10	**Rachael Muscatello, PhD** Development and parasympathetic regulation in male and female adolescents with autism spectrum disorder: A two-year longitudinal study
11	**Susanna Sutherland, MS, MEd, PhD Candidate** Compensatory coping and depression in women with Interstitial Cystitis
12	**Maxwell Roeske, BS, PhD** Incomplete hippocampal inversion determines hippocampal shape in schizophrenia
13	**Anna Huang, PhD** Characterizing Age Effects of Thalamic Nuclei Volumes Across the Lifespan
14	**Suzanne Avery, PhD** Hippocampal hyperconnectivity is associated with positive symptom severity in early psychosis
15	**Lauren Hall, B.A.** The impact of race on delusional ideation in a subclinical population

Oral Session 2 2:00pm

Sarah Szymkowicz, PhD
Cognitive phenotypes in late-life depression

Alexandra Moussa-Tooks, PhD
Cerebellar structure and cognitive ability in psychosis

Alexander Conley, PhD
Relationship between cholinergic activity and amyloid status using FEOBV PET in healthy postmenopausal women: a pilot study

Alex Steiner, PhD
Glucagon-like peptide-1 receptor differentially controls mossy cell activity across the dentate gyrus longitudinal axis

Poster Session 2 3:00pm

Poster	Presenter
16	**Claire Ryan** Cognitive phenotypes are differentially associated with structural aging brain markers in late-life depression
17	**Catherine N. Conway, BS, BMA** Clinical implications of symptom phenotyping in late-life depression
18	**Jennifer Connell, BS** Malignant Catatonia: A Review for the Intensivist
19	**Meg Benningfield, MD** Longitudinal predictors of depression, anxiety, and alcohol use following COVID-19-related stress
20	**Brandee Feola, PhD** Stress Responses in People with Early Psychosis Using a Multi-Method Approach
21	**Morgan Taylor Sexton, BS** Catatonia, Delirium, and Coma in the ICU and Mortality: Results from the Delirium and Catatonia Prospective Cohort Investigation
22	**Lauren M. Hall, BA** The role of social engagement in the relationship between delusional ideation and internalizing symptoms
23	**Julia Sheffield, PHD** Reasoning biases, behavioral and computational markers of delusions: intercorrelations and specificity
24	**Katie Gibbs, BS** Hippocampal volume deficits in affective and non-affective psychosis
25	**Maureen McHugo, PhD** Increased amplitude of hippocampal low frequency fluctuations in early psychosis: a two-year follow-up study
26	**Monika Naguib** Trajectory of delusion severity in first-episode psychosis
27	**Jennifer Quinde Zlibut, MA** Subtypes of Spontaneous Empathic Facial Expression Production in Autistic Adults

Poster Session 2 continued

Poster	Presenter
28	**Zachary J. Williams, BA** The Prevalence and Correlates of Somatic Symptoms, DSM-5 Somatic Symptom Disorder, and Functional Somatic Syndromes in Autistic Adults
29	**withdrawn**
30	**Alisa Zoltowski, BS** A Pilot Study of Active Social Touch in Autism
31	**Lisa Stewart, MEd, MSN** Bridging recovery initiative despite gaps in entry (BRIDGE): study protocol for a randomized controlled trial of a bridge clinic compared with usual care for patients with opioid use disorder
32	**Alexandra Bettis, PhD** Developing a Digital Health Intervention for Parents of High-Risk Youth following a Psychiatric Emergency
33	**Elizabeth Cosby** Characterizing High-Risk Adolescents' Disclosures of Suicidal Thoughts and Behaviors

Oral Session 1

B.J. Necaise

Gender dysphoria: Diagnosis, treatments, and the role of the psychiatrist

[1] Department of Psychiatry and Behavioral Sciences, VUMC

While great advancement has been made in recent years, gender nonconforming patients continue to struggle with access to high-quality gender-affirming healthcare. Although gender nonconformity is no longer classified as a mental disorder, the gender dysphoria that results may be quite problematic for many. Multiple options exist in a highly personalized and individualized treatment plan which may include hormones and/or surgical procedures. The World Professional Association for Transgender Health has published guidelines for providing these treatments including the engagement of mental health providers to assess capacity and address other underlying mental health conditions. As psychiatrists and other mental health providers, we may be increasingly called upon to thoroughly evaluate the patients and provide formal letters of support as part of these WPATH guidelines. These letters of support should include patient identification, documented confirmation of gender dysphoria diagnosis, identify presence or absence of interfering psychiatric illnesses, patient's capacity to consent to procedure, and provider's explicit support. Understanding basic terminology associated with gender-affirming treatments, WPATH guidelines, and the mental health provider's role can positively impact the needs of this marginalized patient population.

Brent J Necaise, MD

PGY4

I cannot express enough gratitude for Drs. Elizabeth Shultz and Shayne Taylor for all their support and mentorship in caring for the transgender community in Nashville.

Oral Session 1

R.P. Oakley

Psychedelics and Psychedelic-like Medicines in Psychiatry: A Brief Overview and Recent Update on the Evidence

[1] Department of Psychiatry and Behavioral Sciences, VUMC

A resurging interest in psychedelics and psychedelic-like medicines as mental health treatments in the past 2 decades has occasioned strong reactions within and outside of the scientific and clinical communities. Dismissed as a dangerous passing fad by some, heralded as an ancient and therapeutic holy grail by others, the truth—per usual-- lies somewhere in the middle. I will present an extensively researched yet briefly presented overview of: a) the chemical structures and ancient origins of psychedelics and their use, b) the brief and summarily suppressed study and clinical use of psychedelics in the mid-to-late 20th century, c) the recent evidence for the use of the psychedelic psilocybin for treatment of major depression as well as anxiety and depression in the context of terminal illness, d) the recent evidence for the use of the psychedelic-like substance MDMA for treatment of PTSD, and e) the importance of maintaining rational regulations on clinical psychedelic use and not repeating the 1960s-70s.

I am indebted to the work of Dr. Robin Carhart-Harris and his team at the Imperial College London, Rick Doblin and his colleagues associated with MAPS (Multidisciplinary Association for Psychedelic Studies), Dr. Roland Griffiths and Dr Matthew Johnson at the Center for Psychedelic and Consciousness Research at Johns Hopkins, and numerous others across the globe who have previously worked or are currently working in this re-emerging field to discover novel and powerful treatments for severely disabling illnesses as well as to help establish rational best practices for their clinical use.

Ryan P. Oakley, MD
PGY4

Oral Session 1

D.L. Steadman

Psychiatric comorbidities and psychopharmacological considerations in the treatment of the transgender and nonbinary population

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Transgender and nonbinary individuals commonly report experiencing increased levels of mental health problems which correlates with minority stress, prejudice, and discriminatory policies. These disproportionate levels of mental health stress affect the overall wellbeing of transgender people and contributes to very high rates of suicidal ideation, attempts, and completed suicides. Prior research also indicates that transgender people experience higher rates of psychiatric comorbidities compared to the general population including affective, anxiety, personality, and substance use disorders. In treating these psychiatric conditions within the transgender population, there are special psychopharmacological considerations that must be considered when providing safe and effective, gender affirming care. This review will first provide epidemiological data on the prevalence rates of common psychiatric comorbidities and suicide within the transgender population. Subsequently, current information on best practices regarding prescription of psychotropic medications that may affect gender affirming care will be reviewed when treating this population.

David L. Steadman, MD

PGY4

Oral Session 1

I.A. Reddy

Identification of transdiagnostic childhood externalizing pathology within an electronic medical records database and pilot study of rare copy number variation

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Externalizing disorders are broadly defined as disorders of impaired self-regulation and impulse control. In this study, we sought to generate an algorithm that could easily and reliably identify transdiagnostic childhood-onset externalizing cases and controls within a university hospital electronic medical record (EMR) database. Within the Vanderbilt University Medical Center (VUMC) EMR, our algorithm identified cases with a clinician-validated positive predictive value of 86.7% and controls with a negative predictive value of 84%. In individuals of European ancestry, case status was significantly associated with psychiatric comorbidity and with elevated polygenic risk (OR, 1.20; 95% CI, 1.09-1.32; P = 0.00018; based on published genome-wide association data) and male sex (OR, 2.78; 95% CI, 2.29-3.39; P <2x10-16). A pilot application study was performed within case-control cohorts of European (532 cases; 6077 controls) and African ancestry (232 cases; 2053 controls) to assess for rare (allele frequency <0.5) copy number variation using the linked BioVU biobank. Although we were underpowered to detect significant associations with childhood externalizing pathology, a region of potential interest for future study was identified within the European cohort on chromosome 2, containing the gene PRKCE which has been implicated in alcohol-consumption phenotypes.

India Reddy, MD, PhD
PGY4

Poster 1

Y. Osman

Differential diagnosis of anxiety disorders and posttraumatic stress disorder: Two clinical cases with a history of complex trauma

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Anxiety disorders are estimated to affect 9.4% of children and posttraumatic stress disorder is estimated to affect 4% of children according to recent data released by the Centers for Disease Control and Prevention. High rates of comorbidity, particularly in populations with a history of complex trauma make it difficult to determine when presenting symptoms are the result of an anxiety disorder, posttraumatic stress disorder, both, or neither. Although there is a significant overlap in symptoms that can be treated through cognitive behavioral therapy, differential diagnosis is important to ensure that treatment adequately addresses symptoms that do not overlap. Additionally, parsimonious conceptualization and diagnosis is important to guide effective communication between practitioners. The objective of the presented case study is to illustrate the complexities related to differential diagnosis and provide insight into diagnostic and treatment considerations for this population. Both cases were evaluated in a medical center setting that conducts comprehensive assessments for children in the foster care and juvenile justice systems with a history of complex trauma. In both cases, the overarching goal was to determine whether each child should be given a diagnosis for an anxiety disorder, PTSD, both, or neither. The implications for each diagnosis will be explored.

I cannot express enough gratitude for Drs. Elizabeth Shultz and Shayne Taylor for all their support and mentorship in caring for the transgender community in Nashville.

Yael Osman, M.A.

Poster 2

R. Calvosa

Relationship Between Parent-Reported Anxiety and Parent-Reported Sensory Sensitivity in Adolescent Females with and Without Autism Spectrum Disorder (ASD)

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Sensory sensitivity is a symptom of Autism Spectrum Disorder (ASD) prominent in females. Previous research has shown a positive correlation between stress and sensory sensitivity measured by the Short Sensory Profile (SSP). Many females with ASD are also diagnosed with anxiety. In this project, the relationship between sensory sensitivity and anxiety was examined across diagnosis (ASD and TD) and biological sex. The study included 244 participants aged 10-13 years. Sensory sensitivity was measured by the SSP and anxiety was measured by the Multidimensional Anxiety Scale for Children -Parent. Pearson correlations were used to determine associations between sensory sensitivity and anxiety in all groups. T-tests were used to test significance in sensory sensitivity and anxiety in ASD and TD females. ASD females demonstrated significantly more sensory sensitivity ($t(63.14)=-2.661$, $p=0.01$) and anxiety ($t(57.02)=8.72$, $p<0.001$) than TD females. There was no significant correlation between sensory sensitivity and anxiety in ASD females ($r=-0.13$, $p=0.45$). There was a significant correlation in TD females ($r=-0.59$, $p<0.001$), ASD males ($r=-0.47$, $p<0.001$), and TD males ($r=0.50$, $p<0.001$). While ASD females exhibit higher anxiety than TD females, it does not appear related to sensory sensitivity. Factors related to elevated anxiety and sensory sensitivity in autistic females warrants further study.

We thank the children and families that participate in our research. Funding provided by MH111599.

Rachel Calvosa, BS

Poster 3

A. Ered

Exploring the relationship between childhood trauma exposure and neurocognitive performance in individuals with schizophrenia spectrum disorders

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Childhood trauma (CT) has been associated with reductions in overall cognition and particularly working memory and executive function in individuals with schizophrenia spectrum disorders (SSD); however, results have been mixed, with some studies only finding CT – cognition relationships in controls. Our study sought to: (1) replicate and extend findings of associations between CT and cognition in individuals with SSD, and (2) explore relationships between specific cognitive domains and CT subtypes. Our sample included individuals with SSD (n=302) who participated in a large study that included questionnaires (Childhood Trauma Questionnaire) and cognitive battery (Screen for Cognitive Impairment in Psychiatry). Linear regressions controlling for age, sex, and parental education revealed that higher total CT exposure predicted worse overall cognitive performance. We then predicted to individual cognitive tasks from total CT exposure and found that CT predicted Verbal Learning Test (VLT) Immediate, VLT Delayed, and Working Memory Test performance but not verbal fluency or processing speed. After probing CT subtypes predicting to performance on these subtests, we found that physical neglect predicted worse VLT Immediate and Delayed performance, while no CT subtype predicted working memory performance. These findings confirm the CT – cognition relationship in individuals with SSD and indicates that memory dysfunction is of particular concern, especially in those who have experienced physical neglect.

This work was supported by the NIMH grants R01 MH102266 (NDW) and R01 MH070560 (SH), and the Charlotte and Donald Test Fund.

Arielle Ered, M.A.

Poster 4

H.H. Hartnett

An exploration into the relationship between perception/metaperception and anxiety in individuals with autism spectrum disorder

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by deficits within social interactions and communication and restrictive/repetitive behaviors. This often includes difficulty in social settings with evaluating peers (perception) and recognizing peers' evaluations of themselves (metaperception). We hypothesized that in social settings, anxiety could be a contributor. Our study sought to: explore potential group differences between typically developing (TD) and ASD adolescents on perception/metaperception and anxiety and whether relationships existed between anxiety and perception/metaperception. Our sample included TD (n=78) and ASD (n=71) adolescents. Questionnaires included the Perception and Metaperception Questionnaire (PAMQ) and the Multidimensional Anxiety Scale for Children, Second Edition (MASC-2). Independent samples t-tests revealed that no significant differences were found between TD and ASD adolescents on the PAMQ t(131.004) = -1.54, p =0.13. However, significant differences were found on the MASC (total) t(233) = -3.68, p =<.001. Finally, significant positive associations were found between the MASC-2 and 1)negative perception r(147) = .276, p <.001 and 2)negative metaperception r(147) = .435, p <.001. A potential relationship exists between perception/ metaperception and anxiety; however, ASD alone may not account for this. Potential explanations may be individual factors such as IQ, age, developmental maturation, or depression levels and warrants further investigation.

This work was supported by grant R01 MH111599.

Hannah Hyatt Hartnett, SSP, MEd

Poster 5

J. M. Schwartzman

Autism-adapted group Cognitive Behavioral Therapy for adolescent depression: Feasibility, acceptability, and preliminary efficacy

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Autistic adolescents are 2x more likely to experience depression and 7x more likely to die by suicide than the general population. Cognitive Behavioral Therapy (CBT) is a leading intervention for adolescent depression with limited evidence in autism. Autism-adapted CBT outperforms standard CBT for anxiety and OCD, but this work has not been extended to depression. To address this gap, the current study examined the feasibility, acceptability, and preliminary efficacy of a novel autism-adapted group CBT (CBT-ASD) in treating adolescent depression and suicidal ideation. Study measures were administered pre- (week 0) and post-treatment (week 12). Preliminary results from 14 autistic adolescents (2 groups to date) suggest that CBT-ASD is feasible (i.e., 13% attrition, 100% data collection, 87% of adolescents attended >80% of sessions) and highly acceptable (i.e., Madolescent = 4.15 Satisfied, Mparent = 4.75 Satisfied-Very Satisfied). Participation in CBT-ASD was associated with statistically-significant and clinically-meaningful reductions in adolescent depression [$t(1,13) = 2.253$, $p = 0.031$; M = 9.24 T-score reduction] and suicidal ideation [$rs(14) = 0.875$, $p < .001$] on the RCADS. Preliminary findings support the feasibility, acceptability, and efficacy of CBT-ASD in treating depression and suicidal ideation in autistic adolescents. Future research directions include a randomized controlled trial of CBT-ASD

We are thankful to the autistic adolescents and their families for participation in this study. Funding provided by the Vanderbilt Institute for Clinical and Translational Research.

Jessica Schwartzman, PhD

Poster 6

K. Beals

Emotional Awareness, Psychosis, and Childhood Trauma

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Emotional awareness (EA) – the ability to identify and label emotions – is lower in schizophrenia when assessed with self-report, and has been associated with more severe positive symptoms. Exposure to childhood trauma is a risk factor for both low EA and positive symptoms. The current investigation examines associations between an objective, vignette-based measure of EA, positive symptom severity and childhood trauma exposure in individuals with a schizophrenia-spectrum disorder.

Forty-four schizophrenia and forty-eight healthy comparison participants were assessed on the electronic Levels of Emotional Awareness Scale (eLEAS), Childhood Trauma Questionnaire (CTQ), and Positive and Negative Syndrome Scale (PANSS).

Patients demonstrated EA deficits for total (p= .002), self (p= .001) and other (p= .01). In patients, lower EA was associated with worse positive symptoms (rho= -.42, p= .006). Childhood trauma was not significantly associated with emotional awareness (rho=-.17, p=.28) or positive symptoms (rho= .22, p= .16). Emotional awareness is reduced in psychosis when using an objective measure and is related to worse positive symptoms, but not childhood trauma. The lack of a significant relationship with childhood trauma may be due to a lack of power, as the relationships are in the expected directions.

Kendall Beals, BS

Poster 7

E.D. Williamson

The Match at 70: What was, what is, and what could be

[1] Department of Psychiatry and Behavioral Sciences, VUMC

This study examined the seventy-year history of the National Resident Matching Program (NRMP). We reviewed the growing role the NRMP has had in the placement of graduating medical students into internships, from filling about half of open positions in the 1950s, to filling nearly all offered intern positions in recent years. While match rates for graduating medical students in the US have continued to be high (over 90%), anxiety and uncertainty has risen in the last twenty years. Given the NRMP's role, this study outlines a series of recommendations to clarify the application and matching process and to make the procedures more transparent, more uniform, and less stressful for medical students. These recommendations include timelines for offers, easing congestion, and standardizing data collection.

The authors received no funding for this study and report no financial conflicts of interest.

Edwin Williamson, MD

Poster 8

K. Hsiung

Teaching residents how to communicate involuntary commitment decisions to psychiatric patients: a quality improvement project

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Communicating the need for involuntarily commitment to emergency psychiatric treatment to patients is a frequently encountered and difficult task for psychiatrists. The purpose of our quality improvement project is to design a training for VUMC general psychiatry residents on how to communicate involuntary commitment decisions to patients. To survey learner needs, a needs assessment survey (NAS) was distributed among 33 residents. A protocol for communicating involuntary commitment was designed via unstructured interviews with emergency and consult-liaison psychiatry attendings and taught to residents in a 1-hour didactic session. Residents practiced using the protocol on standardized patients in a subsequent 1-hour workshop. NAS results showed residents across all years feared involuntary commitment discussions would lead to patient violence or agitation. A comparison of pre- and post-workshop surveys showed statistically significant improvement in residents' perceived comfort level in their ability to deliver involuntary commitment news ($p = 0.01$), and a trend towards residents intending to make changes to their current communication approach ($p = 0.09$). In conclusion, our intervention was effective in improving resident comfort around involuntary commitment conversations and addressing fear around patient agitation. As a proof-of-concept, it was shown to be a feasible intervention to integrate into regular residency didactic curricula.

Kimberly Hsiung, MD, MS

Poster 9

L. Dockery

Evaluating the Demographics and Outcomes of a Hospital Misuse Protocol

[1] Department of Psychiatry and Behavioral Sciences, VUMC

The treatment of substance use disorders (SUD) within the medically hospitalized population is an important avenue for expanding access to care, and addressing obstacles to successful SUD care is of high importance. One such obstacle is illicit non-prescribed substance use.

At VUMC, a Hospital Misuse Protocol was developed to acquire data on the population utilizing non-prescribed substances in the hospital and help guide best practices.

A Misuse Protocol was implemented in 2018. Data was retrieved for all patients suspected of misuse, as well as all Addiction Consult Service (ACS) patients to serve as a comparison. Data acquired included demographic factors (age, gender, consult diagnosis) and patience care metrics such as discharge disposition, length of stay, and initiation of medications for opioid use disorder.

In comparing the Misuse Protocol patients to the ACS service, these patients were found to be of younger age, have longer length of stays, and were less likely to have buprenorphine prescribed upon discharge, among other key findings.

These findings will ideally help guide future practice on similar consult services to better engage this avenue of SUD treatment.

Lee Dockery, MD

PGY4

Poster 10

R.A. Muscatello

Development and parasympathetic regulation in male and female adolescents with autism spectrum disorder: A two-year longitudinal study

[1] Department of Psychiatry and Behavioral Sciences, VUMC

The parasympathetic branch of the autonomic nervous system (ANS) maintains calm, visceral states at rest and in response to stress, promoting flexible adaptation and behavior. Dysregulation may increase propensity for physical or psychiatric illness. Individuals with autism spectrum disorder (ASD) experience difficulties in social communication, increased stress, and elevated risk for internalizing disorders; therefore, understanding the parasympathetic system in relation to socioemotional behaviors is particularly relevant for youth with ASD. We examined diagnostic- and sex-differences in respiratory sinus arrhythmia (RSA) in 215 adolescents at Year 1 (Y1; 10-13-years -old) and again one year later (Year 2; Y2). Linear mixed effects models examined diagnostic effects over time. Preliminary analyses separately modeled females and males. Youth with ASD demonstrated lower RSA regulation and a blunted change in RSA from Y1 to Y2. In females with ASD, RSA was markedly lower relative to typically developing (TD) females, while ASD males did not significantly differ from TD males. Results expand previous findings of reduced parasympathetic regulation in ASD by revealing a blunted developmental slope, indicating diagnostic differences may persist or worsen over time, particularly in females. It will be necessary to examine clinical implications of prolonged autonomic dysfunction in ASD, especially regarding psychosocial outcomes.

We are grateful to the children and families who participated and continue to support our research. The study was funded by the National Institute of Mental Health (NIMH) grant R01 MH111599 (BAC).

Rachael Muscatello, PhD

Poster 11

S. Sutherland

Compensatory coping and depression in women with Interstitial Cystitis

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Women with genitourinary pain, a hallmark symptom of Interstitial Cystitis/ Bladder Pain Syndrome (IC/BPS), are at a two-to four-fold risk for depression as compared to women without genitourinary pain. Despite the pervasive impact of IC/BPS on psychological health, there is a paucity of work on understanding relations between IC/BPS and distress. Women with overactive bladder use increased compensatory coping (CC) strategies and these behaviors are associated with heightened anxiety and stress. However, it is unknown whether a similar pattern emerges in IC/BPS populations. This study examined relations between CC behaviors and psychological distress in women with IC/BPS to inform understanding of risk and potential mechanisms for intervention. Fifty-five women with IC/BPS completed validated assessments of genitourinary symptoms, emotional distress, and bladder coping behaviors. Five CC behaviors were summed to create a total Bladder Coping Score. Linear regression examined associations between individual coping behaviors, total CC scores, and other risk variables. Most (93%) participants reported use of at least one CC behavior. Beyond the influence of symptom severity, greater depression was associated with higher CC scores. Greater CC was associated with increased depression but not anxiety, suggesting different profiles of coping and psychological distress may exist among different types of bladder dysfunction.

This work was supported by the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction Foundation; the National Institute of Diabetes and Digestive and Kidney Diseases, Grant/Award Numbers: K23DK103910, K23DK118118; and the National Center for Advancing Translational Sciences, Grant/Award Number: UL1 TR002243.

Susanna Sutherland, MS, MEd

Poster 12

M.J. Roeske

Incomplete hippocampal inversion determines hippocampal shape in schizophrenia

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Shape analyses have revealed deformations of the antero-lateral hippocampus in schizophrenia. A recent study reported that incomplete hippocampal inversion (IHI), an anatomical variant of the hippocampus resulting from altered neurodevelopment, is more prevalent in patients with schizophrenia. We hypothesized that IHI contributes to hippocampal shape differences in schizophrenia. We studied 199 schizophrenia patients and 161 healthy control participants with 3-Tesla MRI and measured the prevalence of IHI in each hippocampus bilaterally. Hippocampal surface reconstructions were completed using the SPHARM-PDM toolkit to measure local shape displacements. Displacement was regressed onto IHI score to test the effect of IHI on hippocampal shape variation using SurfStat. We conducted a sensitivity analysis to test for group shape differences with and without IHI included as a main effect. IHI is associated with hippocampal rounding. Linear models not including IHI as a main effect replicate hippocampal shape differences in schizophrenia patients localized to the CA1 region of the antero-lateral hippocampus. Including IHI as a main effect in the model eliminates the bilateral significant shape differences in the CA1 subfield. IHI impacts hippocampal shape and contributes to morphological differences observed in schizophrenia. Our results suggest that shape differences are due to an abnormal development of the hippocampus .

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Maxwell J. Roeske, BS, PhD

Poster 13

A.S. Huang

Characterizing Age Effects of Thalamic Nuclei Volumes Across the Lifespan

[1] Department of Psychiatry and Behavioral Sciences, VUMC

The thalamus is composed of multiple nuclei critical for cognitive, sensory and motor function. Abnormal thalamic morphology has been implicated in the pathophysiology of neurodevelopmental disorders, such as schizophrenia, and disorders of aging, including Alzheimer's Disease. However, typical development of thalamic nuclei across the lifespan has not been adequately characterized, limiting our ability to interpret differences observed in these disorders. The present study characterized the effects of age and cognitive correlates on thalamic nuclei volumes across the lifespan in a cross-sectional dataset (n = 1952, aged 5-100). Linear and curvilinear models of age were compared for the mediodorsal, pulvinar, ventral anterior, ventrolateral and ventral posterolateral nuclei of the thalamus, controlling for sex and total intracranial volume. All thalamic nuclei showed curvilinear effects of age, though thalamic nuclei showed differential patterns of change over the lifespan. Mediodorsal, centromedian and pulvinar nuclei showed a positive association with executive function across all ages. Our results suggest thalamic nuclei volumes may have different trajectories across the lifespan, highlighting the importance of characterizing typical development and aging of these nuclei to better understand thalamic pathology in different disorders .

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Anna S. Huang, PhD

Poster 14

S.N. Avery

Hippocampal hyperconnectivity is associated with positive symptom severity in early psychosis

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Hippocampal abnormalities are among the most consistent findings in chronic schizophrenia. While hippocampal volume and function deficits are also present in the early stage of illness, there is mixed evidence of both increased and decreased functional connectivity. Here, we use graph theory to test the hypothesis that hippocampal network connectivity is broadly reduced in early psychosis and progressively worsens over two years. We examined longitudinal resting-state functional connectivity in 140 participants (68 individuals in the early stage of psychosis, 72 demographically similar healthy control individuals). We used an anatomically-driven approach to quantify hippocampal network connectivity at two levels: 1) a core hippocampal-medial temporal lobe cortex (MTLC) network; and 2) an extended hippocampal-cortical network. Group and time effects were tested in a linear mixed effects model. Contrary to our hypothesis, early psychosis patients showed hyperconnectivity in a core hippocampal-MTLC network. Hippocampal-MTLC network hyperconnectivity normalized longitudinally and predicted improvement in positive symptoms, but was not associated with increasing illness duration. These results show abnormally elevated functional connectivity in a core hippocampal-MTLC network in early psychosis, suggesting increased hippocampal signaling may have prognostic and therapeutic implications.

This work was supported by the Charlotte and Donald Test Fund, R01-MH70560 (SH), R01-MH123563 (SNV), the Vanderbilt Psychiatric Genotype/Phenotype Project, and the Vanderbilt Institute for Clinical and Translational Research (1-UL-1-TR0004450).

Suzanne N. Avery, PhD

Poster 15

L.M. Hall

The impact of race on delusional ideation in a subclinical population

[1] Department of Psychiatry and Behavioral Sciences, VUMC

The association between race and rates of psychosis and psychotic-like experiences (PLEs) is commonly cited and repeatedly replicated in literature. While past literature has implicated perceived discrimination and race as risk factors for psychosis and PLEs, little research has been conducted looking specifically at delusional ideation and its subthemes. Using general population data (N=727) from the Nathan Kline Institute-Rockland (NKI-Rockland) database, we investigated racial differences in delusional ideation. We then tested the prevalence and severity of specific delusional themes across racial groups. Our analyses concluded that Black individuals endorsed higher delusional ideation than White individuals. Specifically, they score higher in grandiose and suspicious delusional subthemes, even when controlling for overall delusional ideation severity. Within these themes, Black individuals endorse stronger delusional pressure in their grandiose ideations. These results illuminate the clear racial disparity that exist in delusional ideation within a subclinical population. They further suggest that suspiciousness and grandiosity are particularly impacted by race. Future work should investigate deeper the contributory factors to these disparities, particularly whether they are based in psychological and/or cultural differences or are the result of assessment/measurement bias.

This work was supported by National Institutes of Health grants R01 MH115000 (NDW), R01 MH123563-01 (SV) and the Vanderbilt Institute for Clinical and Translational Research (through grant 1-UL-1-TR000445 from the National Center for Research Resources/ NIH).

Lauren M. Hall, BA

Oral Session 2

S. Szymkowicz

Cognitive phenotypes in late-life depression

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Executive dysfunction is well-established in late-life depression (LLD) and has been reliably associated with negative clinical outcomes. However, not everyone with LLD presents with executive dysfunction and difficulties in other cognitive domains, such as memory, are also demonstrated. This cognitive heterogeneity may be related to differences in clinical presentation and treatment response, which was investigated in the current study. Non-demented adults with LLD (n=120) were recruited for two separate antidepressant trials. Baseline demographic and clinical characteristics were collected and participants completed a neuropsychological battery. Cognitive test scores were normed against a sample of healthy elders (n=56). Five cognitive domain composites were developed and examined via cluster analyses, with the optimal resulting cluster solution being compared on demographics, clinical characteristics, and treatment outcome. A three-cluster solution best reflected the data, consisting of "High Normal" (n=47), "Normal" (n=35), and "Low Executive Function" (n=37) subgroups. "High Normal" was younger, more educated, predominantly Caucasian, had fewer vascular risk factors, and higher MMSE compared to "Low Executive Function". No group differences were observed on other demographics, clinical characteristics, or for treatment response. Future work will examine cognitive phenotype relationships to neuroimaging markers to help disentangle the heterogeneity of findings often seen in this patient population.

This work was supported by NIMH/NIH grants R21MH099218 and R01MH102246 (WDT).

Sarah Szymkowicz, PhD

Oral Session 2

A.B. Moussa-Tooks

Cerebellar structure and cognitive ability in psychosis

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Dysconnectivity theories and advances in fundamental cognitive neuroscience have increased interest in characterizing cerebellar abnormalities in psychosis. Smaller cerebellar grey matter volume is reported in schizophrenia-spectrum disorders. However, the course of these deficits across illness-stage, specificity to schizophrenia (versus psychosis more broadly), and relationship to clinical phenotypes, primarily cognitive impairment, remain unclear. The SUIT toolbox, a gold standard for analyzing human neuroimaging data of the cerebellum, was used to quantify cerebellar volumes and conduct voxel-based morphometry on structural magnetic resonance images obtained from 574 individuals (249 schizophrenia-spectrum, 108 bipolar with psychotic features, 217 non-psychiatric control). Analyses examining diagnosis (schizophrenia spectrum, bipolar disorder), illness-stage (early, chronic), and cognitive effects on cerebellum structure in psychosis were performed. Cerebellar structure in psychosis did not differ significantly from healthy participants, regardless of diagnosis and illness-stage (effect sizes (ES)=0.01-0.14). In contrast, low premorbid cognitive functioning was associated with smaller whole and regional cerebellum volumes, including cognitive (lobules VI, VII, Crus I, fronto-parietal and attention networks) and motor (lobules I-IV, V, X, somatomotor network) regions in psychosis (ES=0.36-0.60). These effects were not present in psychosis cohorts with average estimated premorbid cognition. Our findings implicate early antecedents, atypical neurodevelopment, or both in cerebellar dysfunction in psychosis.

We thank patients and their families for their participation. This work was supported by NIMH (R01 MH102266 [NDW]; R01 MH070560 [SH]), Charlotte and Donald Test Fund, VICTR, VUIIS, and ACCRE. We also acknowledge the contributions of Kristan Armstrong, Molly Boyce, Erin Brosey, Victoria Fox, & Yasmeen Iqbal Neal who collected data used in this study.

Alexandra Moussa-Tooks, PhD

Oral Session 2

A.C. Conley

Relationship between cholinergic activity and amyloid status using FEOBV PET in healthy postmenopausal women: a pilot study

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Women are at a higher risk of developing Alzheimer's disease (AD), and a key factor may be estrogen depletion and cholinergic activity following menopause. The radiotracer [18F]-fluoroethoxybenzovesamicol (FEOBV) binds to the vesicular cholinergic transporter and therefore can assess in vivo cholinergic integrity. The present study is an investigation of cholinergic integrity in healthy postmenopausal women aged 50-70 years. Ten postmenopausal women (57.3±5.1 years) completed FEOBV and amyloid PET scans, MRI and cognitive assessments. The FEOBV uptake was re-referenced to the supraventricular white matter. Preliminary analyses focused on associations between FEOBV standardized uptake value ratios (SUVR) and key outcome variables. Preliminary analyses showed a positive relationship between FEOBV SUVR and the gray-matter volume of the cholinergic basal forebrain of both hemispheres. Two participants were amyloid positive, and they had lower FEOBV SUVR compared to amyloid negative participants. Higher FEOBV SUVR was associated with better global cognitive performance. The results of this sample show the importance of cholinergic integrity in cognition following menopause, supporting the idea that cholinergic integrity may be linearly related to performance and amyloid aggregation. Deterioration of cholinergic integrity post-menopause may increase the risk of future cognitive decline and development of AD .

Alexander Conley, PhD

Oral Session 2

A. Steiner

Glucagon-like peptide-1 receptor differentially controls mossy cell activity across the dentate gyrus longitudinal axis

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Investigation of the functional role and neuroanatomy of hippocampal dentate gyrus (DG) mossy cells (MCs) has contributed to improved understanding of mechanisms supporting learning and memory. Mossy cells are active in pattern separation, novelty detection, contextual and spatial memory, and avoidance behavior. However, neurohormonal modulation of this system is poorly understood. RNA-sequencing data demonstrated enrichment of Glp1r, the gene encoding glucagon-like peptide-1 receptor (GLP-1R) on mouse DG MCs. In situ hybridization confirmed that Glp1r is selectively expressed in hilar neurons, especially in the ventral DG. Glp1r-ires-Cre mice crossed with Ai14D reporter mice were co-labeled with the MC marker GluR2/3, revealing almost complete overlap of the reporter with GluR2/3 in the ventral DG, but only ~60% overlap in the dorsal DG. Consistently, peripheral administration of the GLP-1R agonist exendin-4 (5 microgram/kg) increased cFos expression only in ventral DG hilar neurons. Using whole-cell patch-clamp recordings, bath application of exendin-4 (200 nM) ventral MCs yielded increased action potential firing following an exendin-4 bath. These data suggest that GLP-1R regulates DG MC activity differentially across the longitudinal axis, supporting future investigation of GLP -1R signaling on MC-dependent mnemonic function

This work was supported by National Institutes of Health (NIH) Grant MH116339 (ASL), the Nicholas Hobbs Discovery Grant (ASL), and the Vanderbilt Faculty Research Scholars award (WPN). Experiments and data analysis were performed in part using the Vanderbilt University Medical Center Cell Imaging Shared Resource (supported by NIH grants CA68485, DK20593, DK58404, DK59637, EY08126, and S10 OD021630). The authors have no conflicts of interest to declare.

Alex Steiner, PhD

Poster 16

C. Ryan

Cognitive phenotypes are differentially associated with structural aging brain markers in late-life depression

[1] Department of Psychiatry and Behavioral Sciences, VUMC

There is heterogeneity in the cognitive presentation of late-life depression (LLD), and this may be due to accelerated brain aging in some individuals. The aim of this study was to investigate structural markers of accelerated brain aging according to differences in cognitive profiles. Non-demented adults with LLD were recruited for two separate antidepressant trials and divided into three groups according to their cognitive presentation (determined by cluster analysis): "High Normal" (n=46), "Reduced Normal" (n=35), and "Low Executive Function" (n=32). All participants underwent 3T structural brain MRI at baseline and measures of white matter hyperintensities (WMHs), right and left hippocampal volumes, and brain-age gap (BAG, or the discrepancy between age an individual's brain appears compared to their actual age) were examined. After covariate adjustment, bilateral hippocampal volumes were significantly smaller for "Reduced Normal" (p's<0.03) and "Low Executive Function" (L: p=0.052; R: p=0.029) compared to the "High Normal" group. "Reduced Normal" and "Low Executive Function" did not differ, nor were there group differences for WMHs or BAG. Future work examining functional neuroimaging markers will help to elucidate how differences in connected brain regions (particularly with the hippocampus) may underlie, or be related to, specific cognitive presentations in LLD .

This work was supported by NIMH/NIH grants R21MH099218 and R01MH102246 (WDT).

Claire Ryan

Poster 17

C.N. Conway

Clinical implications of symptom phenotyping in late-life depression

[1] Department of Psychiatry and Behavioral Sciences, VUMC

There is substantial heterogeneity in how depression is experienced. Moving beyond diagnostic criteria, specific symptom combinations may reflect the underlying neurobiology of late-life depression (LLD). Improving our understanding of symptom phenotypes in LLD may help inform prognosis for recurrence, cognitive decline, or treatment response. In this study, we examined whether patient-rated measures of depression-related mood and physical symptoms were associated with higher depression severity and disability, poorer performance on cognitive measures, and worse treatment outcomes during a prospective eight-week placebo-controlled antidepressant trial. At baseline, participants completed self-report questionnaires assessing symptoms of apathy, anhedonia, rumination, worry, insomnia, and fatigue. Symptom clusters were created and we examined relationships between symptom phenotypes and various outcomes. All symptom phenotype clusters were positively associated with depression severity. After covariate adjustment, increased apathy/anhedonia and fatigue/insomnia severity was associated with higher levels of self-reported disability. For cognition, greater fatigue/insomnia severity was associated with slower processing speed, while higher levels of rumination/worry were negatively associated with episodic memory. No symptom cluster was significantly associated with antidepressant treatment response. Further investigation of symptom phenotypes is warranted to determine their potential clinical relevance, relationship with intrinsic network function, and to potentially identify targets for future interventions .

This work was supported by NIH grant R01 MH102246.

Lauren M. Hall, BA

Poster 18

J. Connell

Malignant Catatonia: A Review for the Intensivist

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Catatonia is a clinical syndrome characterized by psychomotor, neurological and behavioral changes. The clinical picture of catatonia ranges from akinetic stupor to severe motoric excitement. Catatonia can occur in the setting of a primary psychiatric condition such as bipolar disorder or secondary to a general medical illness. Importantly, it can co-occur with delirium or coma. Malignant catatonia describes catatonia which presents with autonomic abnormalities including change in temperature, blood pressure, heart rate, and respiratory rate. It is a life-threatening form of acute brain dysfunction that has several motoric manifestations. Many of the established predisposing and precipitating factors for catatonia such as exposure to neuroleptic medications or withdrawal states are common in the setting of critical illness. Catatonia typically improves with benzodiazepines and treatment of its underlying psychiatric or medical conditions. Electroconvulsive therapy is effective, but is typically reserved for catatonia refractory to benzodiazepines or malignant catatonia. Prompt recognition and treatment of malignant catatonia is crucial because it may be fatal without treatment. Given the high morbidity and mortality associated with malignant catatonia, intensivists should familiarize themselves with this important and under-recognized condition .

Jennifer Connell, BS

Poster 19

M.M. Benningfield

Longitudinal predictors of depression, anxiety, and alcohol use following COVID-19-related stress

[3] Department of Psychiatry and Behavioral Sciences, VUMC

COVID-19 was declared a global pandemic on March 11, 2020. In the context of this unprecedented period of stress and uncertainty, we examined predictors of vulnerability and resilience in emerging adults. Participants (n=200) ages 18 to 25 completed online questionnaires at baseline, 1-month, and 3-months. Measures included: Pandemic Stress Questionnaire, Ruminative Responses Scale, Emotion Regulation Questionnaire, Intolerance of Uncertainty Scale, PHQ-9, GAD-7, and AUDIT. Correlation and linear regression analyses assessed the relationships of baseline factors and pandemic stress on depression, anxiety, and alcohol use severity. Overall, symptoms of depression, anxiety, and severity of alcohol use decreased from baseline to 3-month follow-up. Greater pandemic related stress was associated with greater depression symptoms, anxiety symptoms, and alcohol use severity. Higher rumination and intolerance of uncertainty were associated with increased self-reported pandemic stress. Regression models identified baseline anxiety, greater pandemic stress, and rumination as predictors for later depression. Intolerance of uncertainty and rumination emerged as moderators of later outcomes. This longitudinal study found that increases in symptoms of depression, anxiety symptoms, and severity of alcohol use were predicted by greater pandemic-related stress. Rumination and intolerance of uncertainty moderated outcomes and are potential modifiable targets for prevention of stress-related illness.

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Margaret M. Benningfield, MD

Poster 20

B. Feola

Stress Responses in People with Early Psychosis Using a Multi-Method Approach

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Stress is proposed to contribute to the onset of psychotic disorders and expression of psychotic symptoms. If and how people with psychosis differ in responses to stressors remains unclear, especially in the early stages of psychosis. We examined stress responses in 20 people with early psychosis and 20 controls. Participants completed a Stress Task that involved viewing stress images, calm images, and fixation baselines. Multiple measures of stress were assessed including self-report, heart rate, and cortisol levels. Psychosis symptoms were assessed using the PANSS. Repeated measures ANOVAs tested for group differences in stress responses. Correlations were conducted between stress responses and symptoms. The psychosis group reported higher levels of stress and displayed higher heart rate during the calm and baseline conditions compared to controls (ps<0.001). Groups did not differ in cortisol responses. Within the psychosis group, stress responses during the calm condition were associated with positive and general symptoms (ps<0.05). Our findings suggest that people with early psychosis did not differ in responses to stress, but instead showed stronger stress responses during the calm and baseline conditions. These findings suggest that stress responses to neutral stimuli may be most relevant in understanding the role of stress in early psychosis .

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Brandee Feola, PhD

Poster 21

M.T. Sexton

Catatonia, Delirium, and Coma in the ICU and Mortality: Results from the Delirium and Catatonia Prospective Cohort Investigation

[1] Critical Illness, Brain Dysfunction, and Survivorship Center , VUMC

Catatonia, a form of acute brain dysfunction, has been described in critical illness, comorbid with delirium and coma. Delirium and coma have been associated with mortality, though exact relationships are unclear. We hypothesize that catatonia, delirium, and coma are associated with increased in-hospital and one-year mortality. This study is a convenience cohort that enrolled 378 critically ill adults at a single academic medical center. Catatonia, delirium, and coma were assessed using the Bush Francis Catatonia Rating Scale, the Confusion Assessment Method for the Intensive Care Unit and the Richmond Agitation and Sedation Scale, respectively. Catatonia occurrence was not associated with death on a future day in the hospital, and neither catatonia occurrence nor duration was associated with increased one-year mortality. Delirium occurrence was not associated with death on a future day in the hospital, and neither delirium occurrence nor duration was associated with increased one-year mortality. Coma occurrence was associated with an increased risk of death on a future day in the hospital (HR 2.85, CI 1.45-5.59, p=0.002), and coma occurrence (HR 1.76, CI 1.13-2.73, p=0.013) but not duration was associated with an increased one-year mortality. Coma, but not catatonia nor delirium, was associated with in-hospital and one-year mortality .

This work was supported in part by the Vanderbilt CTSA grant UL1TR002243 from NCATS/NIH. SR was supported by NIMH/NIH T32-MH18921 and 1F31MH127817-01 during completion of this work. AHB was supported by NIMH/NIH K23-MH12273. This work is published in Stress and Health, doi: 10.1002/smi.3125. PMID: 34979053.

Morgan T. Sexton, BS

Poster 22

L.M. Hall

The role of social engagement in the relationship between delusional ideation and internalizing symptoms

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Delusions are a hallmark feature of psychotic disorders and lead to significant clinical and functional impairment. Furthermore, internalizing symptoms, such as symptoms of depression, anxiety, and trauma exposure, are commonly cited to be related to delusions and delusional ideation. While emerging studies are beginning to investigate the impact of low social engagement on psychotic-like experiences, little work has been conducted to examine the relationship between social engagement, internalizing symptoms, and delusional ideation, specifically. Using general population data (N=526) from the Nathan Kline Institute-Rockland (NKI-Rockland) database, we examined the relationships between these factors and tested several indirect effect models to understand how these factors interrelate. Analyses concluded low social engagement is significantly associated with more severe delusional ideation and internalizing symptoms. Our cross-sectional models suggest that social engagement best serves as an indirect effect between the relationship of delusional ideation and internalizing symptoms but may also function as a contributory factor. These findings reveal that social engagement plays a significant role in the relationship between delusional ideation and internalizing symptoms and suggest that social engagement may be a useful place of intervention. Future work should examine the causal and temporal relationships between these factors .

Lauren M. Hall, BA

Poster 23

J.M. Sheffield

Reasoning biases, behavioral and computational markers of delusions: intercorrelations and specificity

[1] Department of Psychiatry and Behavioral Sciences, VUMC

For decades, reasoning biases have been studied as thinking styles that make one vulnerable to the development and maintenance of delusions. More recently, aspects of decision-making have been shown to be related to delusional thinking, including parameters identified using computational models. It is unknown whether these variables are independent predictors of delusional thinking or are indexing common factors. Reasoning biases and reversal learning data were collected in 88 individuals (46 healthy controls (HC), 42 schizophrenia-spectrum (SZ)). Reasoning biases included self-reported jumping to conclusions (JTC), cognitive insight, and bias against disconfirmatory evidence (BADE). Decision-making was measured with win-switch rate, prior on volatility and random exploration. Paranoia and delusions were examined separately. Analysis utilized stepwise regression, controlling for age and sex. Reasoning biases (primarily JTC and BADE) and decision-making measures (win-shift rate and volatility) were significant, independent predictors of delusions. Decision-making was consistently related to paranoia, and reasoning biases were consistently related to delusional ideation. Inclusion of computational parameters increased the proportion of variance explained, particularly for paranoia. Reasoning biases and decision-making are independent predictors of delusional thinking. They may therefore represent distinct cognitive processes that, together, may worsen vulnerability for delusional thinking across the psychosis spectrum .

Julia M. Sheffield, PhD

Poster 24

K. Gibbs

Hippocampal volume deficits in affective and non-affective psychosis

[1] Department of Psychiatry and Behavioral Sciences, VUMC

The hippocampus is smaller in schizophrenia, but the presence of hippocampal volume deficits in affective psychosis is unclear. Anterior and posterior hippocampal regions have distinct functional properties and patterns of connectivity, with anterior regions being most affected in early stages of schizophrenia. Previous studies of affective psychosis have largely examined differences in total hippocampal volume only. Here, we test the hypothesis that volume deficits will present in both anterior and posterior regions in non-affective psychosis (PSY-NA) and anterior regions alone in affective psychosis (PSY-A). We analyzed total, anterior, and posterior hippocampal volume using automated segmentation of structural MRI data from 345 patients with a psychotic disorder (103 PSY-A, 242 PSY-NA) and 214 healthy controls. Compared to controls, PSY-NA exhibited smaller total volume in anterior and posterior regions. PSY-NA exhibited smaller whole hippocampal volume than PSY-A, driven specifically by the anterior region. PSY-A displayed only smaller posterior hippocampal volumes compared to controls. Our findings suggest that volume differences are limited to the posterior hippocampus in affective psychosis. Posterior hippocampal dysfunction is linked to deficits in spatial learning and memory function. Future directions include investigating stage of illness as a mediator and characterizing the impact of atypical hippocampal development in affective psychosis .

Katie Gibbs, BS

Poster 25

M.K. McHugo

Increased amplitude of hippocampal low frequency fluctuations in early psychosis: a two-year follow-up study

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Neuroimaging studies have revealed hippocampal hyperactivity in schizophrenia. In the early stage of the illness, hyperactivity is present in the anterior hippocampus and spreads to other regions as the illness progresses. Resting state functional MRI signal amplitude may be a proxy measure for increased metabolism and disrupted oscillatory activity, both consequences of an excitation/inhibition imbalance underlying hippocampal hyperactivity. Here, we used fractional amplitude of low frequency fluctuations (fALFF) to test the hypothesis of progressive hippocampal hyperactivity in a two-year longitudinal case-control study. We analyzed longitudinal resting state fMRI data collected over two years from 59 individuals in the early stage of psychosis and 67 demographically similar healthy individuals. fALFF was calculated using AFNI 3dRSFC and extracted from individual-specific regions of interest for the anterior and posterior hippocampus. We found increased fALFF in the anterior and posterior hippocampus of individuals in the early stage of psychosis at study entry. Contrary to our hypothesis of progressive hippocampal dysfunction, we found evidence for normalization of fALFF over time in psychosis. Our findings support a model in which hippocampal fALFF is a marker of psychosis vulnerability or acute illness state rather than an enduring feature of the illness .

This work was supported by the Charlotte and Donald Test Fund and NIMH grants R01-MH70560 (SH).

Maureen K. McHugo, PhD

Poster 26

M. Naguib

Trajectory of delusion severity in first-episode psychosis

[1] Department of Psychology, Vanderbilt University

In the DSM-5, delusions are defined as "firmly held," but previous studies in chronic patients suggest that the severity of delusions can change over time; however, the impact of time on different delusional themes has not been examined in first episode psychosis. In a sample acquired from statewide coordinated specialty care programs for first episode psychosis in Pennsylvania, 568 individuals who completed the Brief Psychiatric Rating Scale (BPRS) at baseline, were included, along with their 6-month (N=270) and 12-month (N=186) follow-up. Severity of grandiosity, persecution, and unusual thought content was measured over time. The change in delusion severity was tested using a linear mixed model, controlling for age at baseline, gender, and race with the participant as a random effect. The severity of all three delusion themes significantly improved between baseline and 6-months, and the severity stabilized between 6-months ($p's < .001$) and 12-months ($p's > .05$). It is seen that delusion severity changes over time in first-episode psychosis patients tending to improve particularly over the first 6 months of engagement with a first episode treatment program. Future analyses will consider the role of psychological factors and diagnosis in this trajectory

We would like to thank Megan Westfall for providing the original data set that was used for statistical analyses.

Monika Naguib

Poster 27

J.M.. Quinde Zlibut

Subtypes of Spontaneous Empathic Facial Expression Production in Autistic Adults

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Our objective was to explore whether atypical patterns of facial expression production metrics in autism reflect the dynamic and nuanced nature of facial expressions or a true diagnostic difference. We used automated facial expression metrics from 84 adult video recordings while they completed a computerized empathy task. Our analysis steps: 1) use K-means clustering on the facial feature sets for ASD (n=27) and NT (n=57) participants separately to derive interpretable clusters, and 2) Autism-NT group comparisons were conducted on the two more stable clusters from each analysis using trimmed means ANOVA based on expressiveness and emotive congruence to emotionally charged stimuli. Our analyses showed that within the ASD and NT groups, there were larger and more stable clusters and smaller, highly variable clusters that differed in mean peak expressiveness scores and in average emotive congruence. Smaller clusters in each group were characterized as more exaggerated spontaneous facial expressors that were not always congruent with the stimuli's emotional valence. When comparing the two more stable groups, our main finding was that autistic adults show heightened spontaneous facial expressions in response to emotionally charged images irrespective of valence. We did not find evidence for greater incongruous (i.e., inappropriate) facial expressions in autism .

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Jennifer Quinde Zlibut, PhD

Poster 28

Z.J. Williams

The Prevalence and Correlates of Somatic Symptoms, DSM-5 Somatic Symptom Disorder, and Functional Somatic Syndromes in Autistic Adults

[1] Vanderbilt University School of Medicine

Individuals on the autism spectrum frequently report co-occurring psychiatric conditions, with high rates of depressive and anxiety disorders in particular. However, little research to date has investigated the presence or correlates of somatization, another common dimension of psychopathology, in this population. The current study examined the prevalence and correlates of self -reported somatic symptoms and DSM-5 somatic symptom disorder (SSD) in a sample of 830 autistic adults (MAge=34.96 years [range 18–60], 64.3% female sex). Symptoms of SSD were quantified using the Somatic Symptoms Scale–8 (SSS-8) and Somatic Symptom Disorder–B Criteria Scale (SSD-12), with SSD status assigned based on the combination of SSS-8≥9 and SSD-12≥23. Based on these criteria, 27.7% of the sample (Males: 17.2%; Females: 33.5%) met SSS-8/SSD-12 criteria for SSD, and 48.9% of the sample (Males: 33.8%; Females: 57.3%) reported "High" or "Very high" levels of overall symptom burden (SSS-8≥12). Females endorsed all symptoms 2–4 times as often as males. Even after controlling for age, sex, and current symptoms of both anxiety and depression, SSD status was associated with higher levels of autistic traits (SRS-2; d=0.238, CrI95% [0.100, 0.374]) and reduced overall quality of life (PROMIS Global–10; d=-0.426, CrI95% [-0.554, -0.301]).

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Zachary J. Williams, BA

Poster 30

A. Zoltowski

A Pilot Study of Active Social Touch in Autism

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Social/affective touch plays a foundational role in socioemotional development and is increasingly processed reciprocally between individuals as one matures and gains motor autonomy. Though other sensorimotor differences in autism have been previously characterized, limited tools have been available to study how individuals on the autism spectrum apply social touch during interactions with others. CAretaker RoBOt (CARBO), an animal-like robot containing an array of trackballs used as tactile sensors, is a newly developed tool designed to objectively measure properties of active touch while approximating affective touch preferences of animate beings. Using CARBO, we conducted a pilot study to compare active touch patterns between 19 youth on the autism spectrum (AUT) and 16 non-autistic peers (N-AUT). We did not find differences in accuracy, speed, or movement variability between the groups that met criteria for statistical significance. However, several qualitative patterns may warrant further investigation, tentatively pointing towards slower and more consistent hand movements in the autistic group. In addition to collecting more data, our future goals are to study how these objective properties of active touch may translate to human social interactions

This work was supported by the National Institutes of Health under awards 2T32MH064913-16 and R01MH102272.

Alisa Zoltowski, BS

Poster 31

L. Stewart

Bridging recovery initiative despite gaps in entry (BRIDGE): study protocol for a randomized controlled trial of a bridge clinic compared with usual care for patients with opioid use disorder

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Patients with substance use disorders are overrepresented among general hospital inpatients, and their admissions are associated with longer stays and increased readmission. The integration of addiction with medical care can better engage patients and minimize fragmentation of care. Hospital addiction consultation services and transitional "bridge" clinics have emerged as potential solutions. The Bridging Recovery Initiative Despite Gaps in Entry (BRIDGE) trial seeks to determine if these clinics are superior to usual care. This single-center, pragmatic, randomized controlled clinical trial enrolled hospitalized patients with opioid use disorder (OUD) initiating medication for OUD (MOUD) in consultation with the addiction consult service. Patients were randomized to a co-located, transitional, multidisciplinary bridge clinic or to usual care. The primary endpoint is hospital length of stay. Secondary endpoints include quality of life, linkage to care, buprenorphine adherence, rate of known recurrent opioid use, readmission rates, and costs. Implementation endpoints include willingness for bridge clinic referral, attendance rates, and reasons patients were ineligible for referral. The main analysis will use an intent-to-treat approach with full covariate adjustment. This pragmatic trial will provide evidence for proactive linkage to a bridge clinic for hospitalized patients with OUD initiating pharmacotherapy through the addiction consult service

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Lisa Stewart, MEd, MSN

Poster 32

A. Bettis

Developing a Digital Health Intervention for Parents of High-Risk Youth following a Psychiatric Emergency

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Adolescent emergency department (ED) visits for psychiatric problems have increased substantially in the past 20 years. The first 3 months after a teen's ED visit is a high-risk time for teens to repeat dangerous behaviors, including suicidal thoughts and behaviors. Despite evidence that outpatient mental health treatment reduces this risk, few teens connect with or complete a full course of mental treatment after their ED visit. While parents can play a central role in facilitating teens' access to care, resources to educate parents about mental services and support them in this high-risk period are critically lacking, representing an important gap in our current models of care. We conducted qualitative interviews with 12 parents who had recently utilized the ED with their teen during a psychiatric emergency to inform the development of a parent-focused digital health intervention. Several themes emerged from our qualitative coding, including a need for real-time resources, concrete strategies, ongoing support, and psychoeducation about child mental health. Privacy and stigma were also a concern for parents. Themes will be presented and implications for intervention discussed in this poster presentation.

This project is supported by funding from the Klingenstein Third Generation Foundation Access to Care Fellowship Grant.

Alexandra Bettis, PhD

Poster 33

B. Cosby

Characterizing High-Risk Adolescents' Disclosures of Suicidal Thoughts and Behaviors

[1] Vanderbilt University School of Medicine

Disclosure of suicidal thoughts and behaviors (STB) is a critical step in identifying and intervening to support youth at risk. The present study aims to characterize youth experiences of STB disclosure to inform family-based suicide prevention.

At inpatient admission, N=86 adolescents (Mage=14.69; SD=1.50) completed self-report measures of suicidal ideation and of their STB disclosure experiences, including how their parents learned about their STB. Youth rated perceived parental response to their STB disclosure and answered an open-ended item assessing what they wish their parent had done differently in response to their disclosure.

Approximately 42% of youth reported directly disclosing STBs to parents. Mean ratings of parents' emotional responses to disclosure were: anxious 4.25 ± 1.11; sad 4.13 ± 1.32; angry 3.00 ± 1.69; shocked 2.89 ± 1.42. One third characterized their parents' response to disclosure as "very helpful," while one third rated it as "not at all helpful." Qualitative data highlighted several themes related to improving parent-child STB disclosure, including youth desire for parental validation, parental emotion regulation, and earlier intervention.

Data highlight the variability in patterns of and perceived responses to STB disclosure in at-risk youth. Improving parent-child communication around STB disclosure may be an important target for risk reduction.

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B. Cosby, BS

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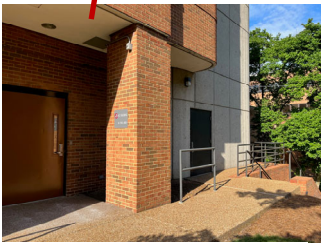
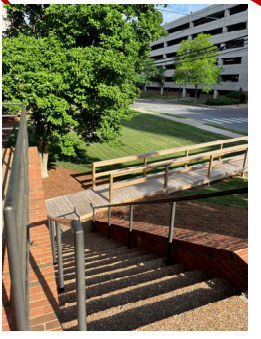
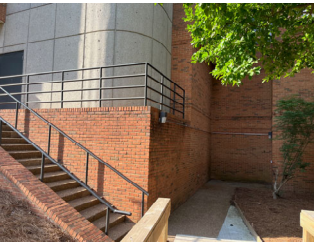
Navigating Academic Psychiatry Day



Conference Center Door
(Oral Sessions)



Stairs



Outside Gym Door
(Poster Sessions/Lunch)

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You can access the VPH Conference Center from the outside door or through controlled access doors from inside VPH (for employees with swipe access)

For those with accessibility needs, there is interior access via elevator between locations.