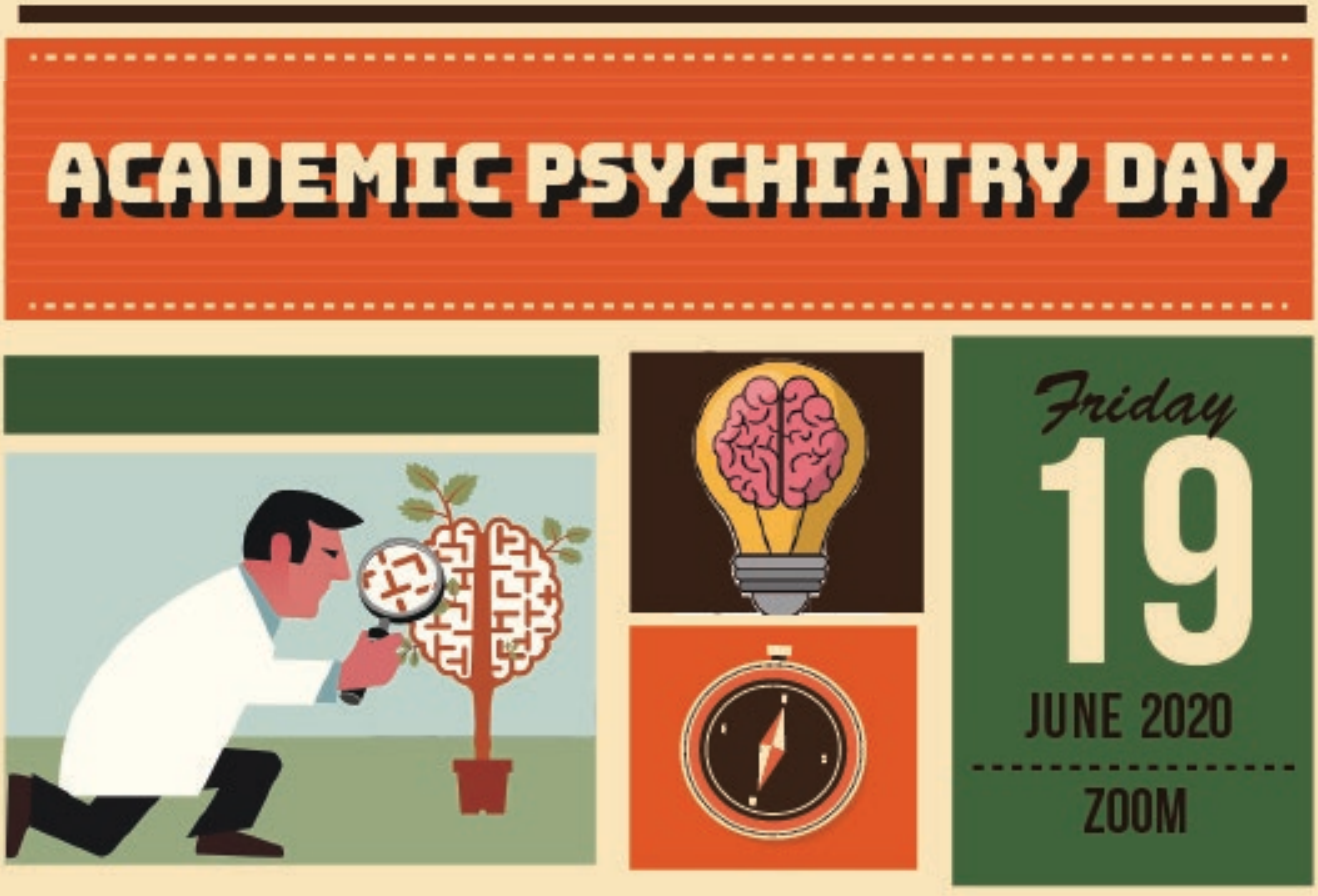
ACADEMIC PSYCHIATRY DAY

Department of Psychiatry and Behavioral Sciences
Vanderbilt University Medical Center



www.vumc.org/psychiatry/academic-psychiatry-day

June 19, 2020

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OPENING COMMENTS

Welcome to the first Department of Psychiatry and Behavioral Sciences Academic Psychiatry Day.

There are a number of sessions to this year's remote APD. The opening comments, the oral sessions, the trivia session, and the very brief closing comments are all accessed through the following url and password:

Join Zoom Meeting:
https://zoom.us/j/94110389474?pwd=aER1aXZWRGt0ejNvUWVJWjhiSzN4UT09

Meeting ID: 941 1038 9474
Password: 991613

Each of the poster presentations in the three poster sessions are hosted by the first author of the poster
(**Abbreviated List of Presenters:** pages 6-10).

ORGANIZING COMMITTEE

We are indebted to the members of the organizing committee for the 2020 Academic Psychiatry Day (APD). Without their energy and dedication this would not have occurred.

The members of this year's organizing committee are:

Kimberly Albert

Ron Cowan

Melissa Cyperski

Ariel Deutch

Jennye Laws-Woolf

Alan Lewis

Maureen McHugo

Paul Newhouse

Sepi Shokouhi

Jo Ellen Wilson

M. E. Wood

We wish to acknowledge our special thanks to four individuals. **Jennye Laws-Woolf** worked hand in hand with us and shared her knowledge of both organization and the local community. **M. E. Wood** was instrumental in assisting us is having CME/CE credit offered.

A special and deeply felt appreciation goes to two members of the organizing committee, who shouldered most of the responsibilities involved in implementing the program and in generating the abstract book

Maureen McHugo *and* Sepi Shokouhi

SCHEDULE

12:00	Introduction
12:15	Poster Session I
1:00	Trivia I
1:20	Oral Session
2:25	Poster Session II
3:10	Trivia II
3:30	Poster Session III
4:20	Closing Comments

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C. Cascio	Neural correlates of cardiac interoceptive focus across development: Implications for social symptoms in autism spectrum disorder	Poster I-8	https://zoom.us/j/91347214824?pwd=dzFZKzhWQVhYME9Rdmg2OGZPM09vdz09 Meeting ID: 913 4721 4824 Password: 258196
S. Christman	Accelerated Brain Aging Predicts Impaired Cognitive Performance and Greater Disability in Late-Life but not Midlife Depression	Poster I -11	https://us02web.zoom.us/j/81921021245?pwd=QUl0blhCNDU1RTI1M3VseDZaQTFOdz09 Password: 2D2dmE
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E.C. Newbury	An Exploration of Patient Wait Times and Referral Patterns for Psychology Services in an Integrative Medicine Clinic	Poster III-36	https://us02web.zoom.us/j/89118823836?pwd=VlBEN1VQc2dWY3IoWjdUMXdJRG9lUT09 Meeting ID: 891 1882 3836 Password: 9aZDq4
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ORAL SESSION

In order to watch the presentations in the oral session, please go to:

https://zoom.us/j/94110389474?pwd=aER1aXZWRGt0ejNvUWVJWjhiSzN4UT09

Meeting ID: 941 1038 9474
Password: 991613

C. Sprick[1], A. Michel[1]

Personal Statement Writing Workshops: Exploring the Utility of Reflective Writing for Medical Students

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Professionalism is an essential component of medical education that is notoriously difficult to teach. Reflective writing has emerged as a promising tool for the instruction and assessment of professionalism in medical students, though there are barriers to implementation including lack of student engagement and perceived lack of utility. We hypothesized that workshops focused on reflective writing in the context of preparing a residency personal statement could address such obstacles and allow students to use personal reflection in a practical context. We conducted a series of three personal statement writing workshops for third-year medical students. Participants were asked to complete a pre- and post-workshop survey, as well as participate in a feedback session at the end of the final workshop. Students who participated in the workshops experienced increased confidence in their ability to write a residency personal statement and increased their confidence in their ability to communicate effectively through writing. Students also reported increased abilities for self-reflection that they felt were beneficial for their professional growth during clinical rotations. Every participant who completed the post-workshop survey indicated that they would sign up for the workshops again and would recommend the workshops to other students.

Acknowledgments: We thank the Department of Psychiatry and Behavioral Sciences and Dr. Ronald Cowan for providing financial support and encouragement.

L. Rosas-Vidal[1], M. Altemus[1], P. Jagasia[1], E. Havener[1], S. Patel[1]

The Endogenous Cannabinoid 2-AG in the Prelimbic Prefrontal Cortex Regulates the Specificity of Fear Memories

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Post-traumatic stress disorder (PTSD) is a psychiatric disorder that develops following a traumatic event. In PTSD, patients may experience generalization of their fear responses to otherwise safe stimuli. Understanding the mechanisms for pathological fear generation and anxiety may lead to development of better treatments for PTSD. The endocannabinoid (eCB) system is a retrograde neurotransmitter system that has been implicated in regulating fear and anxiety. Particularly, 2-arachidonoylglycerol (2-AG), one of the major eCBs, is thought to mediate resiliency to traumatic experiences as well as aspects of fear learning including expression and extinction. Here we test the hypothesis that 2-AG is involved in regulating fear generalization. Our data shows that pharmacological inhibition of 2-AG synthesis facilitates cue and contextual fear generalization. Furthermore, inhibition of 2-AG synthesis during fear learning is associated with decreased plasticity in prelimbic prefrontal cortex (PL), but not with changes in plasticity in other structures involved in the regulation of fear such as amygdala, bed nucleus of stria terminalis, and infralimbic prefrontal cortex. Moreover, inhibition of 2-AG synthesis disrupts spontaneous PL activity by reducing synchronicity between neurons. These results suggest that 2-AG fine tunes the conditions where freezing is appropriate by regulating both plasticity and activity within PL.

Acknowledgments: This work was supported by grant NIH/ MHR01107435.

B. Frock[1], M. Skikic[1], E. Williamson[1]

Didactic by Debate: An Innovative Approach to Teaching Controversial Topics in Psychiatry Residency

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Psychiatrists and mental health providers are often looked to for answers regarding complex social questions. These are often difficult to discuss, as they can be controversial, timely to explain, and intersect with political and legal issues. More so, trainees are not always aware how the many national psychiatric organizations stand on certain issues (APA, AACAP, for example). At present, there is a deficiency in the education of psychiatry trainees to adequately equip them with the appropriate knowledge or background to discuss these topics with peers and patients. Active learning via engagement in debate has been studied as an effective tool in enhancing critical thinking, comfort level with topics, as well as improving tolerance of differing viewpoints. We introduced a "didactic by debate" series that includes participation from experts in the field and department members. Specifics topics included The Goldwater Rule, cannabis, gun control, and physician assisted death. We then used surveys with both qualitative and quantitative measures to assess the benefit, interest, and degree of learning among attendees.

Acknowledgments: I would like to thank Drs. Maja Skikic and Edwin Williamson for guiding and mentoring me. In addition, Dr. Skikic assisted with study design and data collection, while Dr. Willamson offered support and encouragement.

B. Allison[1]

Resilience in the Face of Adversity, Uncertainty, and Everything in Between

[1] Department of Psychiatry and Behavioral Sciences, VUMC

The purpose of this presentation will be to discuss the concept of psychological resiliency, and its role in psychiatry. This will include defining both it, as well as, some of the major factors considered while exploring its role in trauma and adversity. The relation resiliency has to stress, particularly in regards to the HPA stress axis and subsequent development of varying psychopathology will also be briefly covered, in effort to identify those populations considered to be most vulnerable. The overarching goal of this discussion will be to expand understanding of how we conceptualize stress and resiliency not only for our patients to better optimize their treatment, but to also identify our own vulnerabilities as providers while dealing with varying degrees of adversity and cultural differences.

POSTER SESSION I

The posters in this session can be reviewed in the **Abbreviated List of Presenters**, shown on pages 6-10.

Please note that each poster is hosted by the first author of the poster, and that there is a separate url and password for each poster.

You may view as many or as few posters as you wish. However, please note that the session will end after 40 minutes has elapsed. If a person viewed each poster for 5 minutes, they would have seen less than 70% of the posters in the session. This suggests that viewers plan which posters to visit prior to the APD.

However, because the posters are hosted by your colleagues, should you have more questions about a poster, or even missed viewing a poster of interest, remember that you can easily contact the author(s) of the poster and arrange for a private viewing!

E. Flook[1], M.M. Benningfield[1], M.M. Silveri[2], DG Winder[3,4], J.U. Blackford[1]

Resting State Alterations in BNST Network Connectivity During Abstinence from Alcohol Use Disorder

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] McLean Hospital
3 Vanderbilt Center for Addiction Research
[4] Department of Molecular Physiology and Biophysics

Relapse in alcohol use disorder (AUD) is commonly triggered by negative affect. Rodent models of abstinence have identified the bed nucleus of the stria terminalis (BNST) and connected regions as critically involved in regulating negative affect. However, little is known about BNST neurocircuitry alterations in humans during abstinence. This study tested the hypothesis that BNST intrinsic connectivity differs during abstinence in patients with AUD relative to controls. Twenty patients with AUD in abstinence (AUD; 30-180 days of sobriety) and twenty healthy controls (HC) participated. BNST intrinsic connectivity was evaluated with regions of interest (ROIs): amygdala, anterior hippocampus, anterior insula, hypothalamus, and ventromedial prefrontal cortex. There was a main effect of group for BNST-hypothalamus (AUD < HC; $p < 0.05$) and BNST-anterior insula (AUD < HC; $p < 0.05$) intrinsic connectivity. For these ROIs, HC showed positive BNST connectivity, which is not seen in AUD. At rest, HC showed robust intrinsic connectivity between the BNST and both the anterior insula and hypothalamus, consistent with known connections between these regions. In contrast, this connectivity was absent in the AUD group, suggesting a critical alteration in this BNST network that regulates negative affect during abstinence.

Acknowledgments: Funding: R21AA025385, T32GM007347, F30AA027418, and T32MH018921. Acknowledgments: Hannah Gardner.

J.E. Wilson[1], K. Stepanovic, B. Rogers[2], A.L. Kiel, E.W. Ely, J. Jackson[3],
for the VISIONS Investigators, VISualizing Icu SurvivOrs
Neuroradiological Sequelae cohort study

The Association between Brain Volumes and Posttraumatic Stress Disorder in Intensive Care Unit Survivors

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Department of Radiology and Radiological Sciences
[3] Health Services Research

Introduction: Millions are admitted to the intensive care unit (ICU) every year. Many survivors will experience posttraumatic stress disorder (PTSD). The association between PTSD symptoms and hippocampal and amygdala volumes in ICU survivors has not been described. We hypothesize that the severity of posttraumatic stress symptoms in ICU survivors is associated with lower volumes of both the hippocampus and amygdala at 3 and 12 months. Methods: Secondary analysis of the VISIONS study, a prospective sub-study of the BRAIN-ICU cohort, which included survivors of critical illness. The PTSD Checklist Specific (PCL-S) was used at 3 and 12 months to evaluate the ICU as a traumatic experience. A MRI brain was obtained at discharge and 3 months. To compare median brain volumes at discharge and 3 months for those with and without PTSD symptomatology, we used a Kruskal-Wallis (KW) test. Results: At 3 month follow up, 3 patients had PTSD symptomatology and N=1 at 12 month follow up. There was no difference between median brain volumes (hippocampus or amygdala) between individuals with PTSD symptomatology at either 3 or 12 months (p-values >0.05). Conclusion: Large scale studies should be undertaken to elucidate possible neurobiological markers of PTSD in ICU survivors.

R. Muscatello[1], S. Vandekar[2], B. Corbett[1]

Evidence for Decreased Parasympathetic Response to a Novel Peer Interaction in Older Children with Autism Spectrum Disorder

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Department of Biostatistics

The autonomic nervous system (ANS) directs physiological changes in the body in response to a number of environmental stimuli, including social encounters. For youth with autism spectrum disorder (ASD), increased stress response and/or atypical ANS regulation to benign social encounters may influence social behaviors, and, along with developmental and experiential factors, shape psychological outcomes. The current study measured ANS response to a peer-based social interaction paradigm in 50 typically developing (TD) children and 50 children with ASD (ages 10-13). Respiratory sinus arrhythmia (RSA), a cardiac measure of parasympathetic influence on the heart and pre-ejection period (PEP), a sympathetic indicator, were collected during a friendly, face-to-face conversation with a novel, same-aged peer. Linear mixed models revealed that, while there were no diagnostic effects for RSA or PEP, older youth with ASD did demonstrate an overall blunted parasympathetic (RSA) response. Further, increased severity of parent-reported social symptoms was associated with a decrease in RSA. Parasympathetic functioning, as opposed to sympathetic arousal, may be especially important in behavioral regulation. Future studies should further elucidate the developmental factors contributing to stress responses in ASD, the impact of physiological response on observable social behavior, and potential long-term consequences of chronic social stress in ASD youth.

Acknowledgment: The authors express their gratitude to the children and their families for their participation in the study. This study was funded by an Autism Speaks Weatherstone Predoctoral Fellowship (#10616) awarded to RAM, and a National Institute of Mental Health R01 (MH111599) awarded to BAC.

M. Klemencic[1], B. Corbett[1]

Peer Stress and Coping in Adolescents with Autism Spectrum Disorder and Typical Development: An Exploratory Analysis using the Responses to Stress Questionnaire

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Adolescence is often distinguished by a unique set of interpersonal challenges, including stress related to peers. The Responses to Stress Questionnaire (RSQ; Connor-Smith et al., 2000), a well-validated and widely-used measure of stress-related coping strategies, categorizes the ways in which individuals interact and cope with a particular stressor. Domains include Primary Control Engagement Coping, Secondary Control Engagement Coping, Disengagement Coping, Involuntary Engagement, and Involuntary Disengagement. The current study included RSQ (Peer Stress Version) data from 217 youth with autism spectrum disorder (ASD; n=121) or typical development (TD; n=96) enrolled in a longitudinal study examining stress. It was hypothesized that ASD and TD youth would exhibit different coping profiles. Independent sample t-tests revealed that, compared to TD individuals, youth with ASD reported significantly higher Involuntary Engagement ($t(215) = -3.76$, $p<0.001$) and Involuntary Disengagement ($t(214.87) = -4.61$, $p<0.001$). Additionally, youth with TD reported significantly higher use of Primary Control Engagement Coping ($t(214) = 3.51$, $p=0.001$) and Secondary Control Engagement Coping ($t(215) = 3.99$, $p<0.001$). These findings underscore the potential clinical benefits of measuring stress and coping in adolescents. A longitudinal approach to future research can elucidate changes in coping strategies as individuals-particularly those with ASD-transition to adulthood.

Acknowledgments: We wish to thank the children and families who participate in our research. Funding provided by NIMH MH111599 (Corbett).

B. Feola, M[1]. McHugo[1], K. Armstrong[1], M.P. Noall[1], E.A. Flook[1], N.D. Woodward[1], S. Heckers[1], J.U. Blackford[1]

BNST Hyperconnectivity in Schizophrenia Patients with Comorbid Anxiety

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Models of schizophrenia propose alterations in fear and anxiety circuitry. Studies of fear processing provide evidence for altered amygdala function and connectivity. However, studies of individuals with schizophrenia have yet to examine the bed nucleus of the stria terminalis (BNST), a brain region that is critical for anxiety. In the present study, we examined BNST function and connectivity to threat in schizophrenia. Participants included healthy control subjects (HC, n = 15), individuals with schizophrenia and anxiety (SZ+Anx, n = 15), and individuals with schizophrenia without anxiety (SZ-Anx, n = 16). Group differences (SZ vs HC and SZ+Anx vs SZ-Anx) in BNST function and connectivity (gPPI) were measured during a threat anticipation task. In response to unpredictable threat, the SZ+Anx group demonstrated BNST hyperconnectivity with the salience network (insula/dorsal anterior cingulate cortex) compared to the SZ-Anx group ($p < .05$, cluster corrected). In response to predictable threat, the SZ+Anx group had BNST hyperconnectivity with the fear network (sublenticular extended amygdala/prefrontal cortex/anterior insula). BNST activation did not differ across groups. Importantly, BNST connectivity differed for patients with or without anxiety disorders, highlighting the importance of considering comorbid anxiety in studies of emotion processing in schizophrenia.

Acknowledgments: Support for this project was provided by the Charlotte and Donald Test Fund, the Jack Martin MD Research Professorship in Psychopharmacology (JUB), NIH grant T32MH018921 (BF, EAF), and the Vanderbilt Institute for Clinical and Translational Research (1-UL-1-TR000445 from the National Center for Research Resources/NIH).

A. Huang[1]. B. Rogers[2], J. Sheffield[1], M. Jalbrzikowski[3], A. Anticevic[4], J.U. Blackford[1], S. Heckers[1], N.D. Woodward[1]

Thalamic Nuclei Volumes in Psychotic Disorders and Youth with Psychosis Spectrum Symptoms

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Department of Radiology and Radiological Sciences
[3] Department of Psychiatry, University of Pittsburgh
[4] Department of Psychiatry, Yale University

Several influential models posit that the pathophysiology of psychosis includes thalamic abnormalities due, at least in part, to atypical brain development, and related to mechanisms of cognitive impairment. While multiple lines of evidence indicate thalamic dysfunction, evidence that association nuclei are differentially affected is sparse. We used a recently developed method for parceling thalamic nuclei from standard T1-weighted structural images in a large cohort of adults with a psychotic disorder (n>450), and the Philadelphia Neurodevelopmental Cohort (PNC: n=1601), which includes youth with psychosis spectrum symptoms, in order to clarify the anatomical specificity, neurodevelopmental basis and cognitive correlates of thalamic pathology in psychosis. Psychosis was associated with significantly smaller pulvinar, mediodorsal and ventrolateral nuclei volumes. Youth with psychosis spectrum symptoms, but not youth with other psychopathologies, also exhibited significantly smaller pulvinar volumes. Pulvinar volumes were correlated with cognitive function in both adults and youth. These results provide critical support for the involvement of thalamic association nuclei in the pathophysiology of psychosis, are consistent with a neurodevelopmental basis for thalamic pathology, and support a role for thalamic association nuclei in mechanisms of cognitive impairment.

Acknowledgments: This work was supported by NIMH grants R01 MH102266 (awarded to NDW), R01 MH115000 (awarded to NDW and AA), R01 MH070560 (awarded to SH) and the Charlotte and Donald Test Fund, and the Vanderbilt Institute for Clinical and Translational Research (through grant 1-UL-1-TR000445 from the NCRR).

K. Dunham[1]. B. Keceli-Kaysili[2], A.J. Golden[2], P. Santapuram[2], J.I. Feldman[1], T. Woynaroski[2,3,4]

Neural Responses to Audiovisual Speech in Infants At-Risk for Autism Spectrum Disorder: An ERP Pilot Study

[1] Vanderbilt University
[2] Vanderbilt University Medical Center
[3] Vanderbilt Brain Institute
[4] Vanderbilt Kennedy Center

This study aims to determine a) whether visual cues increase the efficiency of speech processing as indexed via event-related potentials (ERPs) in infants at low risk for ASD (infant siblings of TD children; Sibs-TD), and (b) whether infants at high risk for autism spectrum disorder (i.e., infant siblings of children with ASD; Sibs-ASD) display a lesser boost in speech processing efficiency with access to multisensory versus unisensory cues compared to Sibs-TD. 15 infants were included in the study. Participants view videos of a female speaker saying syllables in audiovisual and auditory only conditions. Data are collected using NetStation and 128-channel Geodesic sensor net. The raw EEG signal is sampled at 1000 Hz and referenced to the vertex (Cz). The amplitude of the N1and P2 as measured at Cz are extracted from the grand average waveform of each participant and manually reviewed. Sibs-TD display an increased P2 amplitude in response to audiovisual relative to auditory only speech at 8 and 10 months and a suppressed P2 amplitude in response to audiovisual versus auditory only speech between 12-18 months of age. On average, Sibs-ASD display reduced differentiation of audiovisual versus auditory only speech as indexed by the P2 amplitude compared to Sibs-TD.

C. Cascio[1]. M. Failla[1], L. Bryant [2], B. Heflin[3], L. Mash[4], K. Schauder[5], M. Gerdes[6], A. Weitlauf[7], B. Rogers[8]

Neural Correlates of Cardiac Interoceptive Focus Across Development: Implications for Social Symptoms in Autism Spectrum Disorder

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Microsoft
[3] Florida International University
[4] Emory University
[5] Children's National Hospital
[6] Boston University
[7] Department of Pediatrics, VUMC
[8] Department of Radiology and Radiological Sciences, VUMC

Interoception, the processing of sensory information relevant to physiological functioning, is integral to building emotional awareness and modulating social behaviors. The role of interoception in behaviors affected by autism spectrum disorder (ASD) has prompted inquiry, but mixed results regarding cardiac interoceptive accuracy in ASD. In this study, we explored the neural basis of cardiac interoception using an fMRI heartbeat-counting task. We predicted that interoceptive-specific response in the insula, the site of primary interoceptive cortex, would be related to ASD symptomatology. We investigated the relationship of insula responses during cardiac interoceptive focus and a self/caregiver-reported autism-related symptom scale (Social Responsiveness Scale-2 (SRS)). Participants included 46 individuals with ASD (age 8-54, mean = 19.43 +/- 10.68 years) and 54 individuals with typical development (TC, age 8-53, mean = 21.43 +/- 10.41 years). We found no significant difference in interoceptive accuracy or neural response to cardiac interoception focus in ASD. Several insula subdivisions had a curvilinear relationship to age, peaking in early adulthood. Interoceptive-specific insula response was associated with adult self-report SRS scores; this association differed by diagnostic group and was not present for caregiver-reported scores. This work suggests there is no global deficit in cardiac interoception in ASD.

K. Albert[1], B. Boyd[1], W Taylor [1,2], P. Newhouse[1,2]

Differential Effects of Estradiol on Neural and Emotional Stress Response in Postmenopausal Women with Remitted Major Depressive Disorder

[1] Center for Cognitive Medicine, Department of Psychiatry and Behavioral Sciences, VUMC
[2] Geriatric Research, Education, and Clinical Center, Veterans Affairs Tennessee Valley Health System, Nashville Tennessee

Estrogen fluctuations may contribute to MDD risk in women through effects on brain networks important in stress responding, and mood regulation. Although there is evidence to support ovarian hormone treatment for peri-menopausal depression, postmenopausal use has not been well examined. This study investigated whether estrogen modulation of the neural and emotional cognitive responses to stress differs between postmenopausal women with and without MDD history. 60 postmenopausal women (22 with MDD history, 38 with no MDD history) completed an fMRI psychosocial stress task, after receiving no drug or 3 months of daily estradiol (E2). fMRI activity during the task and subjective mood response were examined. In women without a history of MDD, E2 was associated with a more negative mood response to stress and greater activity in emotion perception regions. In women with a history of MDD E2 was associated with a less negative mood response to stress and less activity in emotion perception regions. These results support a differential effect of estrogen on emotional and neural responses to psychosocial stress in postmenopausal women with MDD history. These results may provide a neurological basis for the beneficial mood effects of post-menopausal hormone treatment in women with a history of MDD.

V. Kondev[1], S. Patel[2]

Endocannabinoid Regulation of Ventral Hippocampus-Nucleus Accumbens Circuit and Consequences for Fear Learning

[1] Vanderbilt Brain Institute, VU
[2] Department of Psychiatry and Behavioral Sciences, VUMC

Fear learning is crucial for survival; an organism must learn associations between environmental stimuli and potentially dangerous outcomes to guide behavior towards avoiding aversive consequences or producing defensive mechanisms to cope. Maladaptive fear learning includes an oversensitivity to unpredictable aversive events, persistence of fear memory, and excessive fear in the absence of true danger, which may underlie symptoms characteristic of psychiatric disorders, including anxiety disorders and post-traumatic stress disorder (PTSD). The endocannabinoid (eCB) system includes crucial components of the processes involving fear learning and has recently been identified as an emerging therapeutic target to treat stress-related disorders. Here, we assess the neural mechanism through which eCBs may modulate fear learning by focusing on an understudied input from the ventral hippocampus (vHIPP) to the nucleus accumbens (NAc). Using slice electrophysiology, in vivo optogenetics, and fiber photometry, we assess how eCBs modulate vHIPP-NAc activity and the role this circuit plays in mediating contextual fear conditioning.

S. Christman[1], C. Bermudez[2], L. Hao[2], B.A. Landman[3], B. Boyd[1], K. Albert[1], N. Woodward[1], S. Shokouhi[1], J. Vega[1], P. Andrews[1], W Taylor[1]

Accelerated Brain Aging Predicts Impaired Cognitive Performance and Greater Disability in Late-Life but not Midlife Depression

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Vanderbilt University
[3] Department of Electrical Engineering, VU

Depression is associated with markers of accelerated aging, but it is unclear how this relationship changes across the lifespan. We examined whether a brain-based measure of accelerated aging differed between depressed and never-depressed subjects across the adult lifespan, and any relation to cognitive performance and disability. We applied a machine-learning approach that estimated brain age from structural MRI data in two depressed cohorts (midlife and older adults.) Both completed broad cognitive batteries; the older subgroup completed a disability assessment. The machine-learning model estimated brain age from MRI data, which was compared to chronological age to determine the brain-age gap (BAG=estimated age-chronological age). BAG did not differ between midlife depressed and nondepressed adults. Older depressed adults exhibited significantly higher BAG than nondepressed. BAG was not associated with midlife cognitive performance. In the older cohort, higher BAG was associated with poorer episodic memory performance and, in the older depressed group alone, slower processing speed. We also observed a statistical interaction where greater depressive symptom severity in context of higher BAG was associated with poorer executive function and working memory performance. Increased BAG was associated with greater disability. Unlike midlife depression, geriatric depression exhibits accelerated brain aging, associated with cognitive and functional deficits.

Acknowledgments: This research was supported by National Institute of Mental Health grants R01 MH07775, R01 MH102246, R21 MH099218 and K24 MH110598 and CTSA award UL1 TR002243 from the National Center for Advancing Translational Science.

A.Y. Deutch[1,2]

Are Animal Models of the Psychosis Prodrome an Exercise in Futility?

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[2] Department of Pharmacology, VU

Attenuated symptoms usually predate the first episode of psychosis. This prodrome has attracted much attention over the past generation because it offers the hope that interventions during this period may attenuate or even derail an impending psychotic episode. Accordingly, there has been an effort to develop animal models of the prodrome, in which pharmacological and other treatment approaches could be tested. Several animal models have been put forth, but these raise the concern that an animal model of the prodrome is an exercise in futility. We will discuss the issues, both empirical and theoretical, that animal models of the psychosis prodrome are ill-advised.

J. Quinde[1], B. Heflin[2], L. Mash[3], C. Cascio[4]

Multifaceted Empathy Differences in Autism: Negative but Not Positive Emotion Recognition Impairment

[1] Vanderbilt University
[2] Florida International University
[3] Emory University
[4] Department of Psychiatry and Behavioral Sciences, VUMC

Individuals with autism spectrum disorder (ASD) have historically been described as lacking empathy. Considered a social 'glue', empathy is a multifaceted construct involving both an understanding of self and other's feelings (cognitive empathy, CE) and the experience of shared feelings (emotional empathy, EE). Empathy research in ASD has traditionally used emotionally charged stimuli as a press for empathic responses with a focus on either CE, EE, or both. 62 individuals (ASD = 29, typically developing (TD) = 38) of varied ages ranging from 8-38.30 years performed the multifaceted empathy test (MET) consisting of 32 static images depicting people in emotionally charged conditions. There were no significant group differences found in age, sex, verbal IQ, performance IQ, or full scale IQ. Groups differed significantly in their cognitive ($p = 0.002$) but not emotional empathy ($p = 0.761$). Secondary analyses separated by valence revealed that the group difference present in the cognitive empathy comparison was driven by the negative ($p = 0.008$) but not the positive images ($p = 0.09$). We extend previous knowledge by reporting an effect of valence in which cognitive empathy deficits occur for portrayals of negative but not positive facial expressions.

TRIVIA I

The trivia contest will have two parts, both focusing on internationally known psychiatrists and psychologists. We will play Trivia using Zoom.

In order to play go to:

https://zoom.us/j/94110389474?pwd=aER1aXZWRGt0ejNvUWVJWjhiSzN4UT09

Meeting ID: 941 1038 9474
Password: 991613

In the first Trivia session, each trivia item will be displayed for 30 seconds. Players should offer their answers as quickly possible. We will use the Chat function of Zoom to submit answers. The Chat function will be set so that all responses go to the host. The first person to correctly identify an item will receive 3 points. The second and third individuals to correctly answer will receive 2 and 1 point, respectively. The person who accumulates the most points will be declared the winner, with the next two individuals being runners-up.

The first prize winner will receive:
A $50.00 gift certificate to Parnassus Books.
A $50.00 gift certificate to the restaurant Henrietta Red.
A special beer glass thematically linked to the Trivia game.

The two runners up will each receive:

A special cookie box from Baked on Eighth.

POSTER SESSION II

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However, because the posters are hosted by your colleagues, should you have more questions about a poster, or even missed viewing a poster of interest, remember that you can easily contact the author(s) of the poster and arrange for a private viewing!

M. Noall[1], B. Feola[1], M. McHugo[1], K. Armstrong[1], E.A. Flook[1], N.D. Woodward[1], S. Heckers[1], J.U. Blackford[1]

Increased Arousal to Threat in Patients with Schizophrenia

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Background: Anxiety is common in schizophrenia and associated with several negative outcomes. Increased anticipation to unpredictable threat is a major component of anxiety and is commonly indicated by increased arousal. The present study examined arousal to predictable and unpredictable threat in individuals with schizophrenia. Methods: Participants included healthy control subjects (HC, n=12) and individuals with schizophrenia with comorbid anxiety (SZ+Anx, n=13) and without comorbid anxiety (SZ-Anx, n=13). Skin conductance was collected to assess arousal during a threat anticipation task. Skin conductance amplitude sum was calculated. T-tests were used to examine group differences in amplitude sum during unpredictable and predictable threat (SZ vs. HC and SZ+Anx vs. SZ-Anx). Results: For the HC vs. SZ comparison, SZ had higher amplitude sum during anticipation of both unpredictable ($p = 0.01$) and predictable ($p = 0.04$) threat relative to HC. Within the SZ group, patients with an anxiety disorder had higher amplitude sum during predictable threat relative to patients without anxiety ($p = 0.01$). Conclusion: Individuals with schizophrenia had heightened arousal during anticipation of threat that was impacted by the presence of an anxiety disorder. Understanding the pathophysiology of anxiety in schizophrenia can help identify treatment targeting anxiety and highlight potential subgroup differences.

Acknowledgments: Support for this project was provided by the Charlotte and Donald Test Fund, the Jack Martin MD Research Professorship in Psychopharmacology (JUB), NIH grant T32MH018921 (BF, EAF), and the Vanderbilt Institute for Clinical and Translational Research (1-UL-1-TR000445 from the National Center for Research Resources/NIH).

D. Marcovitz[1], P. McGuire[1], M. Gopaldas[1], S. Haring[2]

A Flipped-Classroom Addiction Curriculum for Hospital Nurses

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[2] Department of Physical Medicine and Rehab, VUMC

Amidst a national opioid crisis and rising associated healthcare costs, general medical hospitals have increased their attention to integration of addiction services into routine medical care. Addiction consult services have begun to proliferate, supported by emerging evidence they can decrease length of stay, readmission, morbidity and mortality through timely initiation of medications-for-addiction treatment (MAT) and linkage of patients to outpatient chronic disease care. Despite this trend at the system level, less is known about the role of nursing in the general medical setting in facilitating integration of care. There is, however, general agreement that increased nursing education in identifying and managing substance use disorders (SUDs) will be a critical element of system and culture change. We propose to design a series of six 5-minute videos on addiction-related topics (stigma, motivational interviewing, and MAT for withdrawal and maintenance in opioid use disorder), complemented by in-person application sessions that are nurse-lead. The video educational intervention, shared on our provider Learning Exchange, will be accompanied by facilitator manuals for nursing staff to host these application sessions, handouts with key information for participants, as well as pre-post surveys to assess changes in knowledge, attitudes and skills related to SUD.

Acknowledgments: We would like to thank Rachel Kromer and Alyssa Mitchard with VUH nursing education.

J.E. Wilson[1], E.W. Ely[1], A. Kim[2], S. Vandekar[2], P. Pandharipande[3], M. Patel[4], S. Mihalko[1], R. Dittus[1], S. Heckers[5], A. Francis

Is Catatonia a Risk Factor for Delirium in the ICU?

[1] Vanderbilt University School of Medicine
[2] Department of Biostatistics, VUMC
[3]Department of Anesthesiology, VUMC
[4]Division of Trauma, VUMC
[5] Department of Psychiatry and Behavioral Sciences, VUMC

Background: Delirium, a form of acute brain dysfunction, characterized by changes in attention and alertness, is a known independent predictor of mortality in the Intensive Care Unit (ICU). We sought to understand whether catatonia, is associated with increased mortality using a variety of modeling approaches. Methods: We prospectively enrolled critically ill patients who were on a ventilator or in shock and evaluated them daily for delirium using the Confusion Assessment for the ICU and catatonia with the Bush Francis Catatonia Rating Scale. Coma was defined as a Richmond Agitation Scale score of -4 or -5. We utilized several survival modeling approaches to assess the association of catatonia, delirium, coma and mortality. Results: We enrolled 375 critically ill patients. Median age was 58 years (95% Confidence Interval (CI): 47 - 67). Main indications for admission to the ICU included: airway disease or protection, sepsis and/or shock. Nearly 20% died in the hospital, with another 11% died post-hospital discharge. Regardless of modeling approach, catatonia was not significantly associated with mortality, however delirium and coma were independently associated with mortality. Conclusion: The presence of catatonia in the context of critical illness may not be associated with mortality, however further research is needed.

M. Roeske[1], S. Heckers[2]

Pharmacologic Treatment of Hippocampal Hyperactivity in Schizophrenia

[1] Vanderbilt University
[2] Department of Psychiatry and Behavioral Sciences, VUMC

The human hippocampus is hyperactive in schizophrenia. Hippocampal hyperactivity is the result of an excitation/inhibition imbalance between pyramidal glutamatergic neurons and GABAergic inhibitory interneurons. Animal studies have demonstrated that hippocampal hyperactivity modulates brain circuits responsible for schizophrenia symptomatology, and human studies have correlated hyperactivity with clinical symptoms using neuroimaging techniques. Emerging evidence suggests that hippocampal hyperactivity could be established as a schizophrenia treatment target, an exciting development given the current lack of any reliable biomarkers for the disease. Studying this biomarker can provide additional evidence for a hippocampal neural mechanism underlying schizophrenia clinical symptoms. One way to study this biomarker is to engage the hippocampus with an intervention. Neuroimaging techniques such as functional MRI allow for the assessment of hippocampal activity in an intervention study. Here we will review the mechanism of action, effects on hippocampal circuity, evidence for use in schizophrenia, and clinical and neuroimaging studies of five different interventions: nicotine, cannabidiol, GABA-A modulators, levetiracetam, and oxytocin. Finally, we will assess the feasibility, validity, novelty, and prior data of these interventions to identify the most promising intervention to utilize for studying this biomarker with functional MRI.

Acknowledgments: This work was supported by the Charlotte and Donald Test Fund.

J. Sheffield[1], A.S. Huang[1], B. Rogers[2], J.U. Blackford[1], S. Heckers[1], ND Woodward[1]

Insula Structure in Psychotic Disorders and Psychosis Spectrum Youth

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Department of Radiology and Radiological Sciences, VUMC

Reduced insula volume is consistently reported in psychotic disorders and those at high-risk. The insula, however, is a heterogeneous structure comprised of three sub-regions defined by the presence of granular layer IV, which traverse the anterior-posterior axis. In addition to being cytoarchitecturally distinct, these granular layers are differentially implicated in affective, cognitive, and somatosensory processing, suggesting that specific regional abnormalities could differentially impact phenotypic development. Furthermore, structural integrity of the insula can be characterized through both volume and surface-based measures, which have different developmental trajectories, providing potential clues into the stage of neurodevelopmental insult. We investigated volume, cortical thickness, gyrification, and sulcal depth of insula granular sub-regions in psychotic disorder patients and youth with psychosis spectrum symptoms. In both cohorts, volume loss followed an anterior-posterior gradient. Dysgranular gyrification was significantly reduced in psychotic disorders but not psychosis-spectrum youth. In both cohorts, dysgranular volume was significantly associated with cognitive ability. Together, these findings are the first to demonstrate an anterior-posterior gradient of insula volume loss in psychotic disorders and youth with psychosis-spectrum symptoms, which contributes to cognitive impairment. Reduced gyrification further suggests very early abnormal neurodevelopment in psychotic disorder patients, implicating the insula (particularly anterior insula) in the pathophysiology of psychosis.

R. McKinney[1], S.N. Avery[1], K. Armstrong[1], S. Heckers[1]

Relational Memory in the Early Stage of Psychotic Bipolar Disorder

[1] Department of Psychiatry and Behavioral Sciences, VUMC

Relational memory is impaired in psychotic disorders. In non-affective psychotic disorders, relational memory deficits are present in the early stage of illness and become more pronounced in the chronic stage. Previous studies have demonstrated cognitive deficits in early-stage psychotic bipolar disorder, but it is unclear whether relational memory is impaired. We examined relational memory using a face-scene binding task in early-stage psychotic bipolar disorder patients (n = 33) and compared their performance with healthy control (n = 40) and early-stage non-affective psychosis participants (n = 40). During training, participants learned to associate faces with background scenes. During testing, participants viewed a scene overlaid by three faces and were asked to recall the matching face. Relational memory was assessed indirectly using eye movements and explicitly using forced-choice recognition. Preferential viewing of the matching face, as captured by overall proportion of viewing and viewing across time, was significantly lower in psychotic bipolar disorder than in the healthy control group. However, preferential viewing of the matching face in psychotic bipolar disorder was significantly better than in non-affective psychosis. These findings provide novel evidence that relational memory in patients with early-stage psychotic bipolar disorder is intermediate between healthy control and early-stage non-affective psychosis subjects.

Acknowledgments: This work was supported by the Charlotte and Donald Test Fund, NIMH grant R01-MH70560 (SH), the Vanderbilt Psychiatric Genotype/Phenotype Project, and the Vanderbilt Institute for Clinical and Translational Research (through grant 1-UL-1-TR000445 from the National Center for Research Resources/NIH), and the Jack Martin MD Research Professorship in Psychopharmacology (JUB).

A. Zoltowski[1], I. Lyu[2], M. Failla[1], L. Mash[3], K. Dunham[2], J. Feldman[2], T. Woynaroski[1], M. Wallace[1], T. Nyugen[2], L. Cutting[2], H. Kang[1], B. Landman[2], C. Cascio[1]

Cortical Morphology in ASD: Findings From a Cortical Shape-Adaptive Approach to Gyrification Indexing

[1] Vanderbilt University Medical Canter
[2] Vanderbilt University
[3] San Diego State University

It has been challenging to identify brain-behavior mechanisms of autism spectrum disorder (ASD), including how differences in brain structure may underlie behavioral features of autism. Prior studies of brain structure in ASD have begun to identify patterns of changes across multiple structural measures, including changes in cortical thickness, local gyrification index, and sulcal depth. However, common approaches to local gyrification indexing as used in prior studies have been limited by low spatial resolution relative to functional brain topography. In this study, we analyze these multiple structural measures in ASD, utilizing a new method of adaptive local gyrification indexing that provides increased spatial resolution over prior studies, increasing confidence that these metrics are applied within functionally-related regions. We employ this method on a sample of N=115 ASD and N=254 neurotypical (NT) subjects ages 6-40. Differing structural patterns emerged in several frontoparietal and temporal regions. Particular findings include multidimensional increases in audiovisual sensory regions and one cluster within somatosensory cortex in which increased sulcal depth significantly corresponded with autism severity, as measured by the Autism Diagnostic Observation Schedule (ADOS). These findings provide increasingly precise regions of interest, particularly within sensory areas, that may be used to better understand behavioral outcomes.

A. Lewis[1], C. Wilson[2], S.L. Rader[1], M. Joffe[3], J. Conn[3,4]

Chemogenetic Activation of Ventral Mossy Cells Impairs Attack Initiation but not Sociability in a Mouse Model of Social Aggression

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[2] Vanderbilt Brain Institute
[3] Department of Pharmacology, VU
[4]Vanderbilt Center for Drug Discovery

Animal models and human studies implicate the hippocampus as a brain structure that can regulate aggressive behavior and component social cognition such as social memory. Mossy cells (MCs) are glutamatergic neurons with cell bodies in the dentate gyrus (DG) that regulate granule cell excitability via projections across the septotemporal axis of the hippocampus, thereby potentially integrating emotional and motivational aspects of the hippocampus with those of cognition and exploration. Previous studies have implicated the DG in aggression in both mice and humans, but whether MCs are themselves involved in aggression regulation is unknown. Here we used an intersectional targeting strategy in outbred CD-1 male mice to express the calcium indicator GCaMP6f in ventral MCs (vMCs). Preliminary fiber photometry experiments showed low vMC activity preceded attack and activity increased concurrent with attack. Activation of vMCs using the Gq-coupled Designer Receptor Exclusively Activated by Designer Drug hM3D(Gq) did not significantly alter locomotion, anxiety-like behavior, sociability when compared to vMCs expressing control mCherry fluorescent protein, but significantly impaired aggression initiation in resident-intruder assays and increased time spent in non-attacking social interaction. These studies suggest vMCs play an important role within the DG to influence attack initiation.

E. Mohr[1], T. Brandmeyer[2], F. Hecht[2], R. Sudhini[3], R. Gupta[3], P. Schoenberg[4], D. Vago[4]

Sustained Attention and Inhibitory Control in Patients Exposed to Mindfulness-Based Stress Reduction

[1] Vanderbilt Stallworth Rehabilitation Hospital
[2] University of California San Francisco School of Medicine
[3] Vanderbilt University
[4]Vanderbilt University Medical Center

Mindfulness-Based Interventions (MBIs) are a family of standardized cognitive and behavioral therapies that focus on cultivating mindfulness-related skills for improving maladaptive cognitive, emotional, and behavioral processes. MBIs have been developed for a wide range of clinical issues and populations in a variety of health settings. Empirically supported MBIs include acceptance and commitment therapy (ACT), dialectical behavior therapy (DBT), and mindfulness-based stress reduction (MBSR). The purpose of the present study was to investigate engagement between MBSR, perceived levels of stress, and performance on an emotional variant of a Go-NoGo task. Pilot data (n = 9) was collected from a multi-site collaboration in individuals with moderate to high levels of stress. Perceived levels of stress and performance on an emotional Go-NoGo task were assessed before and after MBSR. Performance was measured using errors of omission and commission, A', and response time variability. Post-MBSR testing showed a significant decrease in stress levels and performance changes in the GoNoGo task. Preliminary data indicate a decrease in errors of omission and commission, an increase in A', and a decrease in response time variability. These preliminary results suggest MBSR targets self-regulatory mechanisms, leading to changes in perceived stress.

Acknowledgments: This research is supported by NCCIH grant 5F31AT010299-02.

R. Gupta[1], A. Kujawa[1], D. Fresco[2], A. Bernstein[3], H. Kang[4], E. Mohr[4], P. Schoenberg[4], D. Vago[4]

Mindfulness-based Cognitive Therapy: It's Got (Event-Related) Potential for Attentional Bias in Anxiety

[1] Vanderbilt University
[2] Kent State University, OH
[3] University of Haifa, Haifa, Israel
[4]Vanderbilt University Medical Center

Anxiety disorders are associated with threat-related attentional bias, defined as the preferential tendency to allocate attention toward or away from threatening stimuli. Attentional bias may prolong anxiety states by placing inordinate priority on potential threats in the environment. Using a dot-probe (DP) paradigm, Mueller and colleagues (2009) observed that individuals with social anxiety disorder display enhanced P1 event-related potential (ERP) amplitudes to angry-neutral versus happy-neutral face pair cues, suggesting early hypervigilance to angry faces, and decreased P1 amplitudes to probes replacing emotional versus neutral face cues, suggesting later avoidance from emotionally salient locations. Vago and Silbersweig (2012) propose that mindfulness meditation reduces attentional bias by improving efficiency of engagement and disengagement processes. This study investigates the effects of Mindfulness-Based Cognitive Therapy (MBCT) on the P1 ERP in participants with moderate to high levels of trait anxiety (n = 42). P1 ERPs time-locked to angry-neutral and happy-neutral face pair cues and probes in a DP task are assessed pre- and post-MBCT. P1 results from our current sample (n = 13) suggest that MBCT (1) decreases hypervigilance to angry face pair cues, (2) increases engagement with emotional face cues, and (3) increases attentional allocation to probes replacing happy, compared to neutral, faces.

Acknowledgments: This research is supported by NCCIH grant 5F31AT010299-02.

D. Nygren[1], S. Trump[2], J. Constant[1], S. Fleisch[1]

Combining Street Psychiatry with Public Health to Combat Hepatitis A During an Outbreak

[1] Department of Psychiatry and Behavioral Sciences, VUMC
[2] Vanderbilt School of Medicine

The United States is currently in a Hepatitis A virus (HAV) outbreak, and the state of Tennessee identified its own HAV outbreak in December 2017. In response, there were large-scale vaccination efforts by the Tennessee state health department and other community organizations. These efforts were focused in health care centers and shelters. However, a sizeable, high-risk population of rough sleepers was missed by these efforts. In order to reach these at-risk individuals, a partnership was formed between Vanderbilt Street Psychiatry and Shade Tree Clinic (STC), a student-run free health clinic associated with Vanderbilt University School of Medicine. This partnership combined the experience of Shade Tree students and vaccination efforts with the existing community trust created by Vanderbilt Street Psychiatry (VSP). This collaborative effort led to the successful administration of a large number of HAV vaccinations to individuals within this vulnerable population. The success of the program's high acceptance rates of vaccines in a population that stereotypically declines medical care is supporting evidence that the VSP team has gained the trust of the community it serves with its outreach efforts.

Acknowledgments: We are grateful for a gift from the Jack W. Kuhn, Jr. family that supported this work. We thank Dr. Sheryl Fleisch for her mentorship over the past 4 years and tireless dedication to serving the homeless of Nashville, and the Shade Tree Clinic of Vanderbilt Medical School for being a partner in our efforts on this project.

S. Shokouhi[1], W.D. Taylor[1,2], P.A. Newhouse[1,2]

Cholinergic Basal Forebrain Degeneration and Subjective Cognitive Decline in Clinically Normal Elderly Adults

[1] Center for Cognitive Medicine, Department of Psychiatry and Behavioral Sciences, VUMC
[2] Geriatric Research, Education, and Clinical Center, Veterans Affairs Tennessee Valley Health System, Nashville Tennessee

We examined the relationships of sub-regional volumes in the basal forebrain cholinergic system (BFCS) with self-reported subjective cognitive alterations (Everyday Cognition, ECog). Further, we explored whether beta-amyloid (Aβ) and tau influence these associations. All imaging and cognitive data were obtained from 77 ADNI subjects (age 78 ± 8). Structural MRI was used to calculate sub-regional BFCS volumes. These included the nucleus basalis of Meynert (Ch4) and the composite structure (Ch1-3) of the medial septal nucleus (Ch1), the vertical nucleus of the diagonal band of Broca (Ch2), and the horizontal limb of the diagonal band (Ch3). Results: Smaller Ch4 volume was associated with lower Everyday Memory scores (β= 1.9, p= 0.02) whereas larger Ch1-3 volume was associated with Lower Everyday Visuospatial skills (β= -1.32, p= 0.02) and lower Everyday Memory (β= -2.21, p= 0.01). While the best model for predicting Everyday Visuospatial included tau, age, and Ch1-3 volume, we did not detect an interaction between tau and Ch1-3. Conclusion: Early changes in BFCS sub-structures are associated with different domains of subjective cognitive symptoms in normal elderly. The findings related to Ch1-3 associations further support previous studies which demonstrated an enlargement of this region in healthy elderly subjects before AD.

TRIVIA II

The correct answers to the Trivia Quiz. Don't miss it !
To watch Trivia II, please go to:

https://zoom.us/j/94110389474?pwd=aER1aXZWRGtOejNvUWVJWjhiSzN4UT09

Meeting ID: 941 1038 9474
Password: 991613

The first prize winner will receive:
A $50.00 gift certificate to Parnassus Books.
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POSTER SESSION III

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S. Divakar[1], J.E. Wilson[2]

Describing the Epidemiology of Capacity Consults at an Academic Medical Center and Uncovering Potential Biases

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Introduction: A capacity consult uses clinician judgment to determine whether a patient can make medical decisions. This study describes factors associated with capacity determination. Methods: Reviewed charts of adult patients who received capacity consultation by consult liaison service between November 2017 and June 2019 with Institutional Review Board approval. Results: Here, we report on 89 charts; all data (337 charts) will be analyzed before the conference. The median age was 59, 44% were female, 62% white, and 36% Black. Reasons for capacity consultation included patient requesting discharge against medical advice (36%), refusing placement (21%), refusing intervention (20%), and ability to make medical decisions (15%). After evaluation, 54% lacked capacity, 24% had capacity, and decision was deferred in 13%. The median age of those with capacity was 45 and 62 in those lacking capacity. All patients with dementia (N= 5) or active psychosis (N= 1), and 90% of patients experiencing concurrent delirium lacked capacity. Of patients who also received ethics consultation (N=17), 82% lacked capacity and 65% had an established psychiatric history. Conclusions: Psychosis, delirium, dementia, advanced age, and ethics consultation appear to be associated with lacking capacity. Future analyses include understanding which variables are correlated with outcome of capacity assessment.

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Unique Perspectives: Understanding Depression in Early Adolescents with and without Autism Spectrum Disorder through Self- and Parent-Reports

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Depressive symptoms are common in adolescence, yet higher prevalence and severity rates are reported by adolescents with Autism Spectrum Disorder (ASD). Less is known about depressive symptoms in early adolescence (i.e., younger than 13 years old) in ASD per self and parent report. Therefore, the present study examined ratings of adolescent depressive symptoms between early adolescents with and without ASD and their parents as well as to identify types of depression symptoms endorsed in ASD. The total sample (N = 212) included early adolescents with ASD (n=125) and without (n=87) ASD and their parents who participated in the first year of a longitudinal study of pubertal development (PI: Corbett, MH111599). Several analytical methods were employed to examine group differences in depressive severity, reliability and strength of agreement between raters, and item-level analysis of responses on the Children's Depression Inventory (CDI). Results revealed higher depressive symptoms in the ASD group across self and parent ratings, nonsignificant reliability and strength of agreement between raters in the ASD group only, and specific items (worthlessness, avolition) on the CDI endorsed more often by youth with ASD. Findings may provide initial steps to characterizing depression in this population and identifying targets for intervention development.

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Examination of Pubertal Timing in Early Adolescence Reveals Advanced Pubertal Onset in Girls with Autism Spectrum Disorder

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Autism spectrum disorder (ASD) is a complex neurodevelopmental disorder with impairment in reciprocal social communication and poor adaptation to change; thus, the onset of puberty may be a pivotal transition. The cross-sectional study measured pubertal timing to examine hypothesized differences for sex (female vs. male) and group (ASD vs. Typical development (TD)). Participants included 239 children (137=ASD, 102=TD) 10-to-13-years. Pubertal onset measured by genital or pubic stage was investigated with linear regression using main effects of sex and age-by-sex interactions in TD and ASD groups and main effects of sex and diagnosis-by-age interactions in males and females, while controlling for body mass index. In TD, genital (penis, breast) stage showed no difference for pubertal stage for male and female children ($t=1.09$, $p=0.279$, $rdf=96$); however, there were significant differences in ASD ($t=3.03$, $p=0.003$, $rdf=130$). For diagnosis modelled separately by sex, showed significantly earlier pubertal development in females with ASD ($t=2.36$, $p=0.021$, $rdf=75$) but not males ($t=0.737$, 0.462, $rdf=151$). Examination of pubic stage revealed expected sex differences for TD ($t=3.03$, $p=0.003$, $rdf=95$) and ASD ($t=3.83$, $p<0.001$, $rdf=130$). Girls with ASD evidence advanced pubertal onset relative to ASD males and TD females which may have significant psychological, social, physiological and developmental consequences.

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Associative Inference Deficits in Early Psychosis: A Two-Year Follow Up Study

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Background: Relational memory is impaired in chronic schizophrenia, with more subtle impairments in early stages of psychosis. Relational memory is expected to decline as hippocampal structure and function deteriorate throughout the course of psychotic disorders. We tested the hypothesis of relational memory decline over the first two years of illness in EP. Methods: 66 early psychosis (EP) and 64 healthy control (HC) subjects completed the associative inference task at baseline and 59 EP and 52 HC at follow-up. Subjects learned three paired-associate types (House-Face1, House-Face2, Face3-Face4) and were tested on their ability to identify novel, inferential Face1-Face2 pairs. Results: HC subjects performed better (β=-1.547, $p<0.001$) and improved over time (β=0.011, $p<0.001$). Both groups showed improved inferential memory over time (HC: 95% CI=[0.009,0.013]; EP: 95% CI=[0.010,0.016]), more significantly in EP (interaction: β=0.002, $p=0.03$). Schizophreniform patients performed better than the schizophrenia group (β=-0.978, $p=0.007$). Conclusions: We confirmed the previous finding of impaired relational memory in EP, but did not confirm the hypothesis that patients' performance would deteriorate over time. EP patients who progressed to schizophrenia showed greater deficits at baseline and follow-up compared to EP patients with schizophreniform disorder. These findings illustrate a stable course of relational memory deficits in EP.

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Hippocampal Volume in Early Psychosis: a 2-year Longitudinal Study

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Cross-sectional studies suggest that hippocampal volume declines across stages of psychosis. In contrast, longitudinal studies indicate that hippocampal volume is stable in the critical period following illness onset. Here, we examine two previously unexplored reasons for this discrepancy. First, only specific subregions of the hippocampus may change during the early stage of psychosis. Second, there is diagnostic heterogeneity in the early stage of psychosis and cross-sectional analysis does not permit examination of illness trajectory. Hippocampal volume may be reduced only in individuals who will ultimately be diagnosed with schizophrenia. We acquired longitudinal structural MRI data from 63 early psychosis and 63 healthy control participants over 2 years. Subfield volumes were measured in the anterior and posterior hippocampus. We observed a volume deficit in early psychosis participants compared to healthy controls that was most pronounced in the anterior hippocampus, but this deficit did not change over 2 years. Importantly, we found that anterior cornu ammonis volume is smaller at baseline in individuals who were diagnosed with schizophrenia at follow-up, but normal in those who maintained a diagnosis of schizophreniform disorder over 2 years. Smaller hippocampal volume is not diagnostic of psychosis, but is instead prognostic of clinical outcome.

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Relational Memory in Early Psychosis: A 2 Year Follow-up Study

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Background: Relational memory, or the ability to bind information into complex memories, is substantially impaired in schizophrenia but shows lesser impairment in early-stage psychosis. Relational memory declines are thought to parallel hippocampal deficits, suggesting relational memory may be a target for early intervention. However, the intervention window remains unclear as no studies to date have assessed relational memory longitudinally in early psychosis. Methods: We examined relational memory in 118 participants (60 early psychosis patients, 58 healthy controls); 95 participants were assessed at both baseline and two-year follow-up. Participants were trained on face-background scene pairs. During testing, participants were asked to preferentially view the face associated with the background scene as eye-movements were recorded. Relational memory was characterized as the slope of matching-face preferential viewing. Results: Early psychosis patients had smaller relational memory slopes than healthy controls ($t170.42 = 3.53$, $p < 0.001$), which did not change at two-year follow-up (no time-by-group interaction, $p = 0.13$). Conclusions: Our findings demonstrate relational memory deficits persist over the early course of illness but do not show further decline, suggesting a period of stability during the early stage of illness.

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Increased Pain Sensitivity and Pain-Related Anxiety in Individuals with Autism

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Individuals with autism spectrum disorders (ASD) exhibit aberrant pain responsivity, which may be related to altered evaluative pain processing. We hypothesized individuals with ASD report increased pain sensitivity and endorse more pain-related anxiety, compared to controls. We recruited 44 adults (ASD, n=24; TD, n=20) for three heat pain tasks (applied to the calf). We measured heat pain thresholds using a method of limits approach, a pain-rating curve, and a sustained heat pain task with alternating low (42°C) and high (46°C) temperatures (21s, 6 trials each). Individual differences in pain-related anxiety, fear of pain, situational pain catastrophizing, depressive symptoms, and autism-related social communication were assessed. There were no group differences in pain thresholds. For supra-threshold tasks, mean pain ratings were higher in ASD across the pain rating curve and sustained heat task, but more variability in ratings for the ASD group. Pain anxiety (PASS-Total) and pain-related fear (FOP-III-Total) were higher in the ASD group. Overall, these results converge to suggest that both the sensory and cognitive experiences of pain are heightened and interact reciprocally in adults with ASD. Future studies should evaluate the impact of pain-related anxiety on treatment-seeking and pain behaviors, given higher levels of anxiety in ASD.

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Improving Psychotherapy Training of Psychiatry Residents Using Patient Reported Outcome Measures

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Patient reported outcome measures (PROMs) are validated self-report questionnaires that assess the patient's perception of aspects of their health or psychological wellbeing. In clinical psychology, PROMs are often used at the patient level to obtain diagnostic clarity, assess symptom severity and treatment progress, and identify maintaining factors and treatment targets. The use of PROMs in psychotherapy is an important component of many evidence-based psychotherapies, such as Cognitive Behavioral Therapy (CBT). Incorporating PROMs in psychotherapy is an important part of the evidence-based practice of clinical psychology. Therefore, integrating the use of PROMs in the training of psychotherapy providers is an important educational goal. By introducing the use of PROMs in the CBT psychiatry resident training clinic, we hope to enhance the evidence-based psychotherapy training of psychiatry residents. We developed an electronic assessment tool (EAT) using a database of PROMs assessing various aspects of psychological wellbeing to facilitate frequent administration of PROMs by psychiatry residents. Psychiatry residents were provided with instruction on how to use the EAT to support evidence-based psychotherapy practice to obtain diagnostic clarity, assess symptom severity and treatment progress, and identify maintaining factors and treatment targets. We assess resident perceived usefulness of the EAT and PROMs.

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Characterizing Youth's Emotional and Behavioral Needs Upon Entrance to State Custody

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Youth in state custody are more likely than non-custodial children to experience elevated emotional and behavioral symptoms. Research has begun to identify subgroups of children within state custody based on profiles of co-occurring risk factors (Yampolskaya et al., 2013). However, it remains unknown how individual symptom-level risks cluster together. Data for the present study include N = 24,250 youth ages 5 - 18 years who entered Tennessee state custody over a period of 5 years. We used latent class analyses to identify subgroups of children based on ratings of their emotional and behavioral symptoms as assessed by 26 items of the Child and Adolescent Needs and Strengths (Lyons, 2009). These ratings were completed by Department of Children's Services caseworkers upon youth's entrance to custody based on observation and collateral information and capture a broad, multi-domain assessment of youth functioning. Preliminary analyses identified nine unique subgroups; results presented will explore the role of demographic factors (e.g., gender, age) in these subgroups. These findings suggest that the full population of youth in state custody is heterogeneous and consists of subpopulations that share common risk profiles. Future directions to further understand how risks "cluster" together could allow for the targeted allocation of intervention.

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Nicotine Dependence is Associated with Increased Risk of Addiction Severity: A Retrospective Chart Review

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Tobacco use in the United States affects a disproportionate number of people with mental illness and substance use disorders. The use of nicotine replacement during psychiatric hospitalization is a common procedure used to alleviate nicotine withdrawal symptoms. Smoking cessation, however, has not been a traditional focus of treatment due to concern that concurrently addressing multiple addictions poses too great a burden on the patient and smoking is viewed as a benign problem relative other psychiatric conditions. Mounting evidence suggests that addressing smoking and other substance use disorders concurrently leads to improved psychiatric and substance use outcomes and dispels the myth that co-treatment would adversely affect recovery. The purpose of this study was to determine whether nicotine dependence in combination with other substance use disorders conferred a greater risk for addiction severity. We retrospectively analyzed data from 210 patient charts using a modified version of the Addiction Severity Index (ASI) tool. Controlling for multiple factors, there was a moderate positive correlation between nicotine use and addiction severity. The results of this study add to a growing body of evidence that cigarette smoking is associated with poorer psychiatric and substance use outcomes and provides new insight into the use of nicotine dependence as a prognostic factor for addiction severity.

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An Exploration of Patient Wait Times and Referral Patterns for Psychology Services in an Integrative Medicine Clinic

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Osher Center for Integrative Medicine (OCIM) is an integrative medicine clinic that has a three to six month wait list for health psychology services. There is a lack of research on average wait times for mental health services at integrative medicine clinics. The purpose of this investigation is to examine wait times and patterns of referrals to psychological services at OCIM in order to propose programmatic adjustments. We retroactively reviewed a sample of N=500 patients on the OCIM health psychology wait list using the Redcap survey system. We examined multiple variables, including: (a) number of new patients referred per month, (b) patient average length of time on wait list, and (c) referral pattern changes and trends over one year. Results showed an average referral rate of 35 new patients per month. The average length of time spent on the wait list was 123 days, which varied by month. Results indicated a consistent downward trend in wait times over the 12-month span. There were lengthy wait times despite the collaborative health model and provider created system. Seasonal trends were likely related to provider case load saturation. Implications include providing programmatic adjustments to reduce wait times during the spring months.

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Deep Phenotyping of Symptom Domains in Late-life Depression Associated with Distinct Cognitive and Disability Profiles

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Introduction: Late-life depression (LLD) is often characterized by heterogeneous symptom presentation, impaired cognitive performance, and increased disability. This heterogeneity is not well captured by diagnostic criteria or severity rating scales. Formal assessment of specific depressive symptoms may help unravel this heterogeneity as specific symptoms may be related to alterations in specific neural pathways. The purpose of this study is to determine whether specific symptom presentations are associated with distinct cognitive and disability profiles. Methods We examined 74 depressed participants 60 years and older who completed clinical assessments, self-report of disability using the WHODAS 2.0 questionnaire, and self-report questionnaires assessing specific symptoms, including worry, rumination, insomnia, fatigue, anhedonia, and apathy. Participants also completed a neuropsychological test battery. We examined the relationship between symptom questionnaires using cluster analyses and combined scores of scales in the same cluster using a z-score transformation to create composite variables. Results Fatigue/insomnia and anhedonia/apathy positively associated with greater disability; rumination/worry was not. Fatigue/insomnia was associated with slower processing speed and poorer executive function. Rumination/worry was associated with poor episodic memory. Anhedonia/apathy was not associated with any cognitive domain. Conclusion We found that specific symptom domains grouped into three clusters (fatigue/insomnia, anhedonia/apathy, and rumination/worry)

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