Abstracts for Poster Session 1 – Thursday, October 1, 2020 at 2:00 pm ET

#	Presenter (s)	Institution	Poster Title
1	Barry Bryant	Johns Hopkins University	Knowledge Surrounding Proper Administration of Antipsychotic Orally Disintegrating Tablets
2	Amanda Burmeister	Van Andel Institute	Longitudinal metabolomic study in women with or without post-partum depression
3	Manuel Gardea Resendez	Mayo Clinic	Quantifying Illness Trajectories in Bipolar Disorder and Schizophrenia Utilizing the Rochester Epidemiology Project (REP).
4	Meryem Herken	Hacettepe University	Burnout in Healthcare Workers During the COVID-19 Pandemic
5	Annabel Kady	Johns Hopkins University	Depression severity is associated with decreases in long-term opioid use in youth with opioid use disorders receiving buprenorphine/naloxone treatment: 12-month outcomes
6	David Kasick	The Ohio State University	Deployment of telehealth platforms by a hospital based inpatient psychiatric consultation-liaison service during COVID-19: preliminary experiences and future opportunities
7	Bo Hyun Kim	Johns Hopkins University	Association of depression symptom network structure with early-relapse in opioid-dependent individuals treated with extended-release naltrexone or buprenorphine-naloxone
8	Siva Sundeep Koppolu	University of Florida	Impact of COVID-19 on patients who had been getting maintenance and continuous ECT
9	Steven Lamontagne	McLean Hospital	Inflammation links stress to poor COVID-19 outcome
10	Cherry Leung	University of California San Francisco	Women's Perinatal and Postpartum Depression Predict Sympathetic Dominance in Infant ANS Response to Stressors over the First 6 Months of Life
11	Amy Lopez	CU Anschutz Medical Campus	Therapeutic Groups via Video Teleconferencing and the Impact on Group Cohesion
12	Aaiza Malik	The Ohio State University	Project DAWN: Increasing Access to Narcan for Patients
13	Leslie Miller	Johns Hopkins University	Marijuana and cannabidiol attitudes, perceptions, and behaviors among youth receiving mood disorder treatment and their parents: Preliminary results from the MABS study
14	Abigail Nash	SPONSOR: Janssen	Rapid Improvement Across Depressive Symptoms in Adults With Major Depressive Disorder and Acute Suicidal Ideation or Behavior Treated With Esketamine
15	Case Nicastri	McLean Hospital	Impact of COVID-19 on Mental Health and Cognition
16	Nicolas Nunez	Mayo Clinic	An Update On The Efficacy And Tolerability Of Oral Ketamine For Major Depression: A Systematic Review And Meta-Analysis
17	Benjamin Pace	University of Iowa	The Relationship between Clinical Outcome and Heart Rate Variability during Repetitive Transcranial Magnetic Stimulation
18	Alexandre Paim Diaz	University of Texas Health Science Center at Houston	White matter microstructure in the uncinate fasciculus is associated with anhedonia

19	Grace Park	Johns Hopkins University	Do depressive symptoms and their course influence the effects of Attention Deficit Hyperactivity Disorder treatment response on smoking cessation in ADHD smokers?
20	Rebecca Salomon	University of California San Francisco	Redesigning Suicide Research with Postpartum Women During the COVID-19 Pandemic
21	Erica Vest-Wilcox	University of Michigan	A pilot study of functional remediation for bipolar disorder: feasibility, acceptability and efficacy
22	Hannah Williams	MSU & Pine Rest	Concerns About Ketamine Treatment Practices in the Community: A Report of Two Cases
23	Jesse Wright	University of Louisville	Computer-assisted Cognitive-behavior Therapy vs Treatment as Usual for Depression in Primary Care

Presenting Author	Barry Bryant	Johns Hopkins University

1. Knowledge Surrounding Proper Administration of Antipsychotic Orally Disintegrating Tablets

Barry R. Bryant, BS[a]*, Heidy Vanessa Rivera-Muniz, BS[b], Tae Joon Park, BSN[c], Sujin Weinstein, PharmD[b], Paul S. Nestadt, MD[a,d]

*presenting author

[a]Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, Maryland
[b]Department of Pharmacy, Johns Hopkins Hospital, Baltimore, Maryland
[c]Department of Nursing for Psychiatry, Johns Hopkins Hospital, Baltimore, Maryland
[d]Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland

Background: Orally disintegrating tablets (ODT) are not intended to be absorbed orally but instead must be swallowed. Improper administration can result in treatment failure or medication diversion. We investigated whether those who administer antipsychotic medications understand important administration technique differences between ODTs, sublingual (SL) medications, and other methods of oral administration.

Methods: An anonymous 12-item survey was sent to 158 psychiatric nurses across five inpatient units in a large teaching hospital. Preliminary questions collected demographic data before a series of six questions to assess knowledge surrounding proper administration of ODT antipsychotics.

Results: Forty-five nurses completed the survey for a response rate of 28%, and 91% of respondents had greater than one year of experience administering antipsychotics. Only one of the six questions was answered correctly by the majority of respondents. Years of experience was not significantly correlated with accurate answer selection for any of the questions. For the question that asked explicitly about ODT administration, only 27% selected the correct answer while 62% incorrectly reported that ODTs could be administered sublingually.

Conclusions: The results of our survey demonstrate that better education is needed concerning the differences between ODT and SL medications to prevent misadministration and its consequences. We propose a plan for incorporating evidence-based patient specific alerts in the electronic medical record, in addition to blended face-to-face and electronic learning for those who administer ODT antipsychotics.

Presenting Author	Amanda Burmeister	Van Andel Institute

2. Longitudinal metabolomic study in women with or without post-partum depression

Amanda R. Burmeister[1], Zachary Madaj[2], Abigail Ellis[3], Christine Isaguirre[3], Colt Capan[1], Eric Achtyes [4,5], LeAnn Smart[4], Martha L. Escobar Galvis[1], Teodor Postolache[6, 7, 8], Richard Leach[6, 9], Ryan Sheldon[3], and Lena Brundin[1,5]

[1] Center for Neurodegenerative Science, Van Andel Institute, Grand Rapids, MI USA [2] Bioinformatics and Biostatistics Core, Van Andel Institute, Grand Rapids, MI, USA [3] Metabolic and Nutritional Programming Van Andel Institute, Grand Rapids, MI, USA [4] Pine Rest Christian Mental Health Services, Grand Rapids, MI, USA [5] Division of Psychiatry & Behavioral Medicine, Michigan State University College of Human Medicine, Grand Rapids, MI, USA [6]Department of Obstetrics, Gynecology and Reproductive Biology, Michigan State University, Grand Rapids, MI, USA [7] Department of Psychiatry, University of Maryland-Baltimore School of Medicine, Baltimore, MD, USA [8] Rocky Mountain MIRECC for Suicide Prevention, Aurora, CO, USA [9] Department of Obstetrics, Gynecology and Women's Health, Spectrum Health Medical Group, Grand Rapids, MI, USA

Background: Peripartum depression (PPD) is the most common mental health condition affecting women during and after pregnancy, with reports of 10-15% of women suffering from PPD. The stability of the mother's mental health affects both the mother and infant. Yet, 86% of PPD cases are undetected or untreated[1]. Due to the severity of PPD, it is critical that we identify women who may be struggling with depression during this vulnerable period. We investigated the plasma metabolome differences between PPD cases and healthy controls (HC). We hypothesized that women with PPD will have a distinct metabolome that could allow for early detection or classification of PPD.

Method: Expecting mothers were enrolled between 2014-2016 at Spectrum Health clinics in Grand Rapids, MI. At four visits (one per trimester, and 6-weeks post-partum) mothers were psychiatrically evaluated, and plasma samples were taken. 59 subjects were included in this study; 29 with either a diagnosis of PPD or with at least 1 visit $\geq$13 Edinburgh postnatal depression scale (EPDS) score and 30 HC. Metabolic analysis was done using liquid chromatography coupled to a mass spectrometer[2]. Metabolites were log2 transformed and differentially expressed metabolites were assessed using linear mixed-effects models, adjusted for maternal age and batch and ordinal mixed-effects models were used to determine which metabolites associated with EPDS scores for each visit. Second generation p-values (SGPV) with a +/- 10% null interval were used to determine significance.

Results: Women with PPD had significantly elevated vitamin B_5 and inosine monophosphate (IMP) during all 3 trimesters (SGPV = 0), and increased vitamin B_5 in the post-partum (SGPV = 0.14). On average women with PPD had 2.1 times higher IMP and 1.5 times more vitamin B_5 than HC. In the post-partum, PPD cases had a 1.9-fold increase in guanosine compared to HC (95.9% CI 1.2 – 3.1, SGPV = 0). 18 of the 75 measured metabolites were found to have a significant association with EPDS scores. Most of the metabolites associated with PPD occurred in the 3rd trimester; only homocitrate was associated with EPDS scores post-partum, which increased the odds of higher EPDS scores by >500% per unit increase. The following metabolites had more evidence in favor of differential expression between PPD and HC: vitamin B_5, L-glutamic acid, kynurenine, pyruvic acid, quinolinic acid, and 4-hydroxyl-L-glutamic acid (i.e. SGPV < 0.5).

Conclusions: To our knowledge, this is the first longitudinal metabolomic study done in women with or without PPD. Here, we have demonstrated sugar dysregulation, changes in the kynurenine pathway, and increased vitamin B_5 in women with PPD as compared to HC. Importantly, both the kynurenine pathway and vitamin B_5 have been shown to affect inflammatory responses. Kynurenine has been shown to have an immunomodulatory effect on astrocytes by activating the inflammasome leading to increased inflammation[3]. Vitamin B_5 is the precursor for coenzyme A biosynthesis and both pathways have been shown to affect inflammation and oxidative stress responses[4]. This is key because previous research has highlighted the association of inflammatory mediators with depression. Our results indicate that vitamin B_5 or kynurenine metabolites could be used to identify women who are suffering with PPD but are undiagnosed however, further investigation is warranted due to our smaller sample size which is geographically limited.

1. Muzik, M., Marcus, S. M., Heringhausen, J. E. & Flynn, H. When Depression Complicates Childbearing: Guidelines for Screening and Treatment during Antenatal and Postpartum Obstetric Care. *Obs. Gynecol Clin North Am* **36**, 771–x (2009).
2. Roy, D. G. *et al.* Methionine Metabolism Shapes T Helper Cell Responses through Regulation of Epigenetic Reprogramming. *Cell Metab.* **31**, 250–266 (2020).
3. Zhang, Q. *et al.* Kynurenine regulates NLRP2 inflammasome in astrocytes and its implications in depression. *Brain. Behav. Immun.* **88**, 471–481

(2020).
4. Nitto, T. & Onodera, K. The linkage between coenzyme A metabolism and inflammation: Roles of pantetheinase. *J. Pharmacol. Sci.* **123**, 1–8 (2013).

Presenting Author	Manuel Gardea Resendez	Mayo Clinic

3. Quantifying Illness Trajectories in Bipolar Disorder and Schizophrenia Utilizing the Rochester Epidemiology Project (REP)

Manuel Gardea Resendez M.D. (mentee), Javier Ortiz Orendain M.D., J Michael Bostwick M.D., Alastair J. McKean M.D., Mark A. Frye M.D (mentor).

Background: Evidence suggests that many patients with bipolar disorder (BD) and schizophrenia (SCZ) experience a diagnostic confirmation delay as early symptoms are often unrecognized or are non- specific. A current controversy is ascertaining whether a BD or SCZ prodrome [i.e. early sign(s) or symptom(s) indicative of disease onset preceding more diagnostically specific signs and symptoms] exist, and if so, delineating time-frame from prodrome to diagnosis. The concept of prodrome is highly variable but, in cohorts who progress to meet diagnostic criteria for BD or SCZ, it can clarify the trajectory of illness and future potential targets for early intervention.

Methods: We aim to review and analyze patient demographics and longitudinal patterns of symptom endorsement, healthcare utilization, and psychiatric diagnoses of people in Olmsted County who are diagnosed with BD or SCZ. We will utilize the REP, a comprehensive medical records linkage system that indexes medical records, medications, procedures, and other health-related information of persons seeking medical care in Olmsted County, Minnesota. Previous REP studies on bipolar disorder and suicide risk in schizophrenia have been performed offering long-term perspectives of cohorts with confirmed psychiatric disorders. We will include subjects with a first episode of mania or bipolar I disorder diagnosis between the ages of 13-40 from 1/1/1965 through 7/12020. As a criterion, subjects need to be residents of Olmsted County for at least one year prior to the first episode of mania.

Results: The conceptualization of domains identified in the qualitative data through thematic analysis resulted in the following categories: demographics, perinatal data associated with BD and SCZ, previous psychiatric diagnoses, family history, identified risk factors and history of social and functional decline. We included the characteristics of diagnostic entities of clinical high risk for psychosis and cyclothymia, which evidence suggest may be diathesis for SCZ and BD, respectively. We hypothesize that patients with BD with history of psychotic mania and patients with SCZ will have similar illness trajectory as quantified by symptoms of general anxiety, phobia, insomnia, depression, and psychosis, but will have significantly different illness trajectory as quantified by the presence of cyclothymia (BD not SCZ), time from first symptoms to incident case (BDI/BDII vs SCZ), patterns of drug and alcohol use, and psychotropic drug use. An exploratory hypothesis will investigate the illness trajectories identified and its association with known genetic and viral disease risk factors already identified in the Mayo Clinic Bipolar Disorder Biobank.

Conclusion: It may prove to be advantageous to conceptualize the childhood and adolescent clinical phenotypes and other psychosocial factors in individuals who later develop BD or SCZ as clinical risk states rather than early prodromes. Our study intends to highlight the importance of a developmental approach that can contribute to differentiate if early specific and non-specific psychopathology are associated with subsequent BD or SCZ and that would allow earlier diagnosis and treatment and move towards a modern translational epidemiology model.

References:

Faedda, G. L., Baldessarini, R. J., Marangoni, C., Bechdolf, A., Berk, M., Birmaher, B., Conus, P., DelBello, M. P., Duffy, A. C., Hillegers, M. H. J., Pfennig, A., Post, R. M., Preisig, M., Ratheesh, A., Salvatore, P., Tohen, M., Vázquez, G. H., Vieta, E., Yatham, L. N., … Correll, C. U. (2019). An International Society of Bipolar Disorders task force report: Precursors and prodromes of bipolar disorder. *Bipolar Disorders*, *21*(8), 720–740. https://doi.org/10.1111/bdi.12831

Frye, M. A., Mcelroy, S. L., Fuentes, M., Sutor, B., Schak, K. M., Galardy, C. W., Palmer, B. A., Prieto, M. L., Kung, S., Sola, C. L., Ryu, E., Veldic, M., Geske, J., Cuellar-Barboza, A., Seymour, L. R., Mori, N., Crowe, S., Rummans, T. A., & Biernacka, J. M. (2015). Development of a bipolar disorder biobank: differential phenotyping for subsequent biomarker analyses. *International Journal of Bipolar Disorders*, *3*(1). https://doi.org/10.1186/s40345-015-0030-4

Fusar-Poli, P., Sullivan, S. A., Shah, J. L., & Uhlhaas, P. J. (2019). Improving the detection of individuals at clinical risk for psychosis in the community, primary and secondary care: An integrated evidence-based approach. *Frontiers in Psychiatry*, *10*, 1–16. https://doi.org/10.3389/fpsyt.2019.00774

Van Meter, A. R., Burke, C., Youngstrom, E. A., Faedda, G. L., & Correll, C. U. (2016). The Bipolar Prodrome: Meta-Analysis of Symptom Prevalence Prior to Initial or Recurrent Mood Episodes. *Journal of the American Academy of Child and Adolescent Psychiatry*, *55*(7), 543–555. https://doi.org/10.1016/j.jaac.2016.04.017

Van Meter, A. R., & Youngstrom, E. A. (2012). Cyclothymic disorder in youth: Why is it overlooked, what do we know and where is the field headed? *Neuropsychiatry*, *2*(6), 509–519. https://doi.org/10.2217/npy.12.64

Vande Voort, J. L., Singh, A., Bernardi, J., Wall, C. A., Swintak, C. C., Schak, K. M., & Jensen, P. S. (2016). Treatments and Services Provided to Children Diagnosed with Bipolar Disorder. *Child Psychiatry and Human Development*, *47*(3), 494–502. https://doi.org/10.1007/s10578-015-0582-7

Presenting Author	Meryem Herken	Hacettepe University

4. Burnout in Healthcare Workers During the COVID-19 Pandemic

Meryem Herken[1*]; Cuneyt Tegin MD[2]; Rifaat S. El-Mallakh MD[2]

1. Hacettepe University Medical School, Ankara, Turkey.
2. Department of Psychiatry & Behavioral Sciences, University of Louisville, KY, 40208.

*presenting author

Background: Burnout is a psychological syndrome characterized by depersonalization, a sense of reduced accomplishment in day-to-day work and emotional exhaustion.[1]Physician burnout and fatigue has a negative impact not only on one's well-being but also on patient care, treatment outcomes, and the healthcare system as a whole. Additionally, burnout is associated with low job satisfaction, decreased work productivity, increased medical errors, increased risk of malpractice, reduced patient satisfaction, poor quality of patient care, early retirement and healthcare system failure.[2,3,4,5] The current global pandemic is causing fear and concern among many and impacting the mental health of over 40% of individuals.[6] The lives of infected individuals, family and friends, and the society are at stake due to the perpetuated potential effects of the coronavirus disease 2019 (COVID-19). The outbreak started in China turned into a pandemic and infected more than 23.311.719 people around the world by August 24, 2020. [7]In this article we investigated burnout in healthcare workers during Covid-19 pandemic.

Methods: A cross-sectional study was conducted from April 28 to May 18, 2020 in Turkey and the USA where authors were able to access healthcare workers easier. An online survey eliciting sociodemographic conditions, potential risk factors of burnout syndrome identified by literature review[8,9] , and the Pines Burnout Measure[10], short version, was prepared and published online using Survey Monkey[11]. Descriptive statistics were mean, standard deviation, frequency and percent. The Pearson's Chi-square test was used to assess the relationship between categorical variables. The continuous variables were tested by Kolmogrov-Smirnov test. The non-parametric Mann–Whitney U test was utilized to assess sample distribution. Univariate and multivariate logistic regression analysis was performed to identify the risk factors independently associated with severe burnout in at least one subscale. P-values lower than 0,25 were indicated in the multivariate logistic regression tables. A p-value <0.05 was considered to be significant.

Results: 785 of 1237(63%) invited participants completed the survey. All cases in the sample were valid to be analyzed. 104 participants were working in the U.S.A. and 681 participants were working in Turkey. Overall burnout rate in the U.S.A. was 46.2% while in Turkey the rate was 62.6%. ($\chi 2$: 10.145, p = 0.001) Healthcare workers from Turkey are 2.4 times likely to burnout than healthcare workers from U.S.A (Adjusted Odds Ratio(OR):2.4, 95% Confidence Interval(CI) 1.5 to 3.9) Younger healthcare workers are more likely to burnout. (For age under 35 group OR: 1.9, 95%CI, 1.6 to 5.0; for 35-54 age group OR: 2.1, 95%CI 1.2 to 3.5) Female participants are more likely to burnout than males. (Adjusted OR: 2.014, 95% CI 1.4 to 2.7) Burnout rate was 70.6% in "without partner and child" group, 65.2% in "without partner, with child" group and 57.9% in "with a partner" group. ($\chi 2$:7.55, p: 0.023) We didn't find a significant correlation between different occupational groups. Burnout rate in physicians was 59.8% and 63.0% in other healthcare workers. (p: 0.471) And we didn't find any significant difference in between groups of: having a chronic condition (p: 0.245), having anyone diagnosed with (p:0,439)/died from(p:0.791) COVID-19 around, diagnosed with COVID-19 herself/himself(p:0.972), change in living condition during pandemic (p: 0.688) and working hours in a week(p:0.459) Participants who are directly engaged to COVID-19 care, who believe proper precautions were not taken and who use tobacco products are more likely to burnout.(OR: 1.6, %95 CI 1.1 to 2.1; OR:3.1, %95 CI 2.3 to 4.2; OR: 1.7, %95 CI 1.1 to 2.6, respectively)

Conclusions: The responses indicate that variables related to the COVID-19 epidemic do play a role in burnout risk. No interventions have been attempted in relation to COVID-19-related burnout. Our study indicates COVID-19-related widespread burnout in healthcare workers in two different countries, in many different settings and age groups. Adequate resources and support are needed to optimize outcomes for everyone.

References

1. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory Manual, 3rd ed.; Consulting Psychologists Press: Palo Alto, CA, USA, 1996.
2. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: Contributors, consequences and solutions. J. Intern. Med. 2018, 283, 516–529.

3. Moss M, Good VS, Gozal D, et. al. An Official Critical Care Societies Collaborative Statement: Burnout Syndrome in Critical Care Health Care Professionals: A Call for Action. Am. J. Crit. Care 2016, 25, 368–376.
4. Salyers MP, Bonfils KA, Luther L, et al. The Relationship Between Professional Burnout and Quality and Safety in Healthcare: A Meta-Analysis. J Gen Intern Med. 2017;32(4):475-482.
5. Patel RS, Bachu R, Adikey A, et. al. Factors Related to Physician Burnout and Its Consequences: A Review. Behav Sci (Basel), 2018;8(11):98.
6. Czeisler ME, Lane RI, Petrosky E, et. al. Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic. Mortal. Wkly. Rep. 2020; 69(32):1049–1057.
7. Coronavirus disease (COVID-2019) situation reports (2020). Accessed: July 24, 2020: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports.
8. Kamal AH, Bull JH, Wolf SP, et al. Prevalence and Predictors of Burnout Among Hospice and Palliative Care Clinicians in the U.S J Pain Symptom Manage 2016, 51(4):690-696.
9. lorga, M.; Socolov, V.; Muraru, D.; Dirtu, C.; Soponaru, C.; Ilea, C.; Socolov, D.M. Factors influencing burnout syndrome in obstetrics and gynecology physicians. Biomed. Res. Int. 2017, 2017, 1–10.
10. Malach-Pines, A. The Burnout Measure, Short Version, Int. J. Stress Manag. 2005, 12(1), 78–88.
11. Survey Monkey, San Mateo, CA, USA. (available at www.surveymonkey.com)

Presenting Author	Annabel Kady	Johns Hopkins University

5. Depression severity is associated with decreases in long-term opioid use in youth with opioid use disorders receiving buprenorphine/naloxone treatment: 12-month outcomes

Christopher J Hammond MD PhD[1*]; Annabel Kady[1]; Grace Park MPH[1]; Kevin Wenzel PhD[2]; Marc Fishman MD[1,2]

1. Department of Psychiatry & Behavioral Sciences, Johns Hopkins University, Baltimore, MD 21224
2. Mountain Manor Treatment Center, Baltimore, MD 21229
* presenting author

Background: Psychiatric disorders, such as Major Depressive Disorder (MDD), and opioid use disorders (OUD) frequently co-occur during adolescence and young adulthood.[1,2] The role of psychiatric disorders and symptoms on the development, maintenance, and recovery from youth-onset OUD is poorly understood.[2,3] In the present study, we examined relationships between psychiatric symptoms across domains and long-term opioid abstinence in youth with OUD (N=152) following receipt of buprenorphine/naloxone treatment.

Methods: Secondary analyses were conducted using data from a 12-week randomized controlled, multisite study comparing short-term versus extended buprenorphine/naloxone-assisted treatment (NIDA CTN-0010).[4] In the present analytic sample, 141 youth (15-21 years old) with a DSM-IV diagnosis of OUD (57 female, mean age = 19.7+1.5 years) were randomly assigned to receive 12-weeks of extended Bup/Nal-assisted therapy ("Bup-Nal") or up to 2 weeks of Bup/Nal detoxification ("Detox"), with both treatment arms receiving weekly drug counseling. Psychiatric symptoms were assessed via the Youth Self Report (YSR) (Achenbach et al., 2001) administered at baseline and week-12. Bup-Nal and Detox groups did not differ in age, sex, years of education, or on any psychiatric symptom domains at baseline. General estimating equation (GEE) and logistic regression models were used to identify psychiatric symptoms at baseline and baseline to week-12 changes in psychiatric symptoms that were predictive of opioid positive urine (OPU) across 6-month, 9-month, and-12-month follow-up time points. To control for multiple comparisons a Bonferroni procedure was used.

Results: While diverse psychiatric symptoms predicted decreased long-term opioid use in uncorrected analyses, only anxious-depression scores at baseline survived correction for multiple comparisons. Youth presenting to treatment with higher anxious-depression scores were less likely to have an OPU across 6-, 9-, and 12-month follow-up time points ($\chi 2$=8.65, *p=0.003*). In exploratory post-hoc analyses treatment assignment (Bup-Nal > Detox) and the interaction between treatment assignment and change in anxious-depression scores (again Bup-Nal > Detox) predicted lower likelihood of OPU during the long-term follow-up period ($\chi 2$=6.46, *p=0.01*).

Conclusions: Depressive symptoms and disorders represent an important treatment target in youth with OUD. We found that severity of anxious-depressive symptoms at baseline was a positive predictor of decreased long-term opioid use in youth with OUD receiving Bup-Nal treatment. Our results mirror recent clinical data from adult OUD samples[5] and suggest that individuals with co-occurring OUD and depression may represent a distinct clinical phenotype with divergent treatment outcomes. Additional research is warranted to clarify mechanisms and pathways linking depression to treatment outcomes in individuals receiving Bup-Nal treatment for OUD.

1. Richardson LP, Russo JE, Katon W, McCarthy CA, DeVries A, Edlund MJ et al. Mental health disorders and chronic opioid use among adolescents and young adults with chronic pain. J Adolesc Health; 2012,50(6):553-558.
2. Subramaniam GA, Stitzer M. Clinical Characteristics of treatment-seeking prescription opioid vs heroin-using adolescents with opioid use disorder. Drug and Alcohol Dependence; 2009,101:13-19.
3. ROUNSAVILLE BJ, KOSTEN TR, WEISSMAN MM, KLEBER HD. Prognostic significance of psychopathology in treated opiate addicts. Arch Gen Psychiatry, 1986,43:739-745
4. Woody Ge, Poole SA, Subramaniam G, Dugosh K, Bogenschutz M, Abbott P, et al. Extended vs Short-term Buprenorphine-Naloxone for Treatment of Opioid-Addicted Youth: A Randomized Trial. JAMA; 2008:300(17):2003-2011.
5. Peckham AD et al., Depression history as a predictor of outcomes during buprenorphine-naloxone treatment of prescription opioid use disorder, Drug and Alcohol Dependence; 2020: 213 (6): 108-122; doi: https://doi.org/10.1016/j.drugalcdep.2020.108122.

Presenting Author	David Kasick	The Ohio State University

6. Deployment of telehealth platforms by a hospital based inpatient psychiatric consultation-liaison service during COVID-19: preliminary experiences and future opportunities

David Kasick MD, Ashlee Senay DO, Joshua Norman DO, Anita Chang DO, Pedro Bauzá MD, Eleonora Sikic-Klisovic MD, Kristen Carpenter PhD, Kevin Johns MD

Department of Psychiatry and Behavioral Health, The Ohio State University Wexner Medical Center, Columbus, Ohio

Background: Prior to the onset of the COVID-19 global pandemic, our inpatient consultation-liaison psychiatry team (covering ~1400 hospital beds, ~11 new consults/day, >9500 bedside visits/year) did not engage in telehealth use on inpatient general hospital units, consistent with a similar absence of this technology in inpatient medical settings around the country[1]. By March 2020, a sharp rise in individuals receiving treatment for the novel coronavirus began to substantively impact operations at our hospital, leading to the rapid development and implementation of telehealth consultation modalities. Within a month our team was routinely using telehealth technology to evaluate patients in situations where exposure risk was high or to conserve PPE for patients on enhanced contact precautions. However, in lieu of a complete conversion to telehealth technology for inpatient psychiatric consultation[2, 3], our team deployed a hybrid in-person and telehealth model, with the majority of consult visits remaining face-to-face, with multiple factors have impacting our experience.

Methods: Preliminary assessment of technology infrastructure, including acquiring appropriate space for telehealth interviews, equipment, planning staff training sessions, and modification of existing workflow, billing, and documentation practices were conducted in conjunction with implementation of multiple telehealth platforms supported or approved by our institution. Development of workflow modifications to incorporate telehealth, including training and supervision protocols and an onboarding process for residents rotating on our team. A survey of faculty and staff was developed to assess and analyze the ongoing impact of this rapid conversion. Case reviews by faculty peers are continually conducted to support preservation of clinical quality.

Results: With limited previous experience among faculty or trainees, our team has adapted telehealth tools into the workflow of our busy consultation team. The use of this technology has facilitated flexible communication when elevated risk of infection or unnecessary PPE use warrants an alternative to face-to-face examination, although in-person visits account for most encounters. We have maintained operational efficiency without care interruption for patients in isolation without indication of a deleterious impact on clinical quality. Sustainability challenges surrounding adequate user space, process efficiency, and patient preferences have been identified. Teaching residents without prior telehealth experience to provide virtual care has provided an opportunity for curricular innovation. Telehealth platforms have also been helpful for communicating directly with teammates and consultees while adhering to social distancing requirements.

Conclusions: Telehealth interventions for inpatient psychiatric consultation during the COVID-19 pandemic continue to evolve, while creating an opportunity for patients and providers to remain safely connected. The unanticipated benefits of improving communication among colleagues and enhancing resident training may help ensure long term sustainability.

1. Haque SN. Telehealth Beyond COVID-19. Psychiatr Serv. 2020 Aug 19:appips202000368.

2. Kalin ML, Garlow SJ, Thertus K, Peterson MJ. Rapid Implementation of Telehealth in Hospital Psychiatry in Response to COVID-19. Am J Psychiatry 2020; 177:636–637.

3. Montalvo C, Kao LE. A Call to Arms, Not to Disarm: The Importance of Psychiatric Care in the Acute Medical Setting During the COVID-19 Pandemic. Psychosomatics 2020 Apr 3;S0033-3182(20)30061-X

Presenting Author	Bo Hyun Kim, Grace Park	Johns Hopkins University

7. Association of depression symptom network structure with early-relapse in opioid-dependent individuals treated with extended-release naltrexone or buprenorphine-naloxone

Bo Hyun Kim[1]*; Grace Park MPH[1]*; Christopher J Hammond MD PhD[1]*

1. Department of Psychiatry & Behavioral Sciences, Johns Hopkins University, Baltimore, MD 21224

* presenting authors

Background: Depressive disorders are heterogeneous conditions that commonly co-occur with opioid use disorder (OUD) and have complex relationships with OUD treatment outcomes.[1,2] Some of the variance in this association may be due to relationships between opioid use and specific depressive symptoms or symptom clusters that are more impactful on OUD treatment course and relapse risk. Recently, novel network approaches have emerged that conceptualize psychiatric disorders as complex dynamic systems of mutually interacting symptoms. Applying network approaches to the study of co-occurring disorders may improve our understanding of the complex interrelationships between substance use and psychiatric symptoms and how they relate to treatment response.

Methods: In the present study, we examined associations between baseline depression symptom network structures and early relapse to opioids in opioid-dependent adults who participated in a 24-week open-label, randomized controlled, comparative effectiveness study comparing extended-release naltrexone (XR-NTX) or buprenorphine-naloxone (BUP-NAL) for opioid relapse prevention (NIDA CTN-0051).[3] 570 opioid-dependent adults (169 females, mean age = 33.9 years) were randomly assigned to 24-weeks of XR-NTX (4ml, 380 mg, IM q4 weeks) or Bup/Nal (SL, daily dose range = 8-24 mg), with both treatment arms offered weekly behavioral therapy. Depressive symptoms were assessed via the 17-item Hamilton Depression Scale (HAM-D). OUD severity was assessed based upon presence (yes vs. no) of each of the 11 DSM-5 OUD symptoms. XR-NTX and BUP-NAL groups did not differ in age, sex, education, or on HAM-D scores at baseline (bsl). Sparse network structure of the 17 HAM-D depressive symptoms along with OUD total symptom count (severity) at bsl were estimated using Gaussian models of regularized partial correlations and LASSO. Global and local connectivity of network structures were compared across early-relapsers (n=96) and successful inductors (n=474) using permutation testing.

Results: The depressive symptom network of early-relapsers was more strongly connected than that of successful inductors. In the resulting bsl depression networks of early-relapsers, *psychomotor*, *suicidality*, *somatic GI-,* and *somatic GU-symptoms* were the 4 most central symptoms. In contrast, while *psychomotor symptoms* were also central in the bsl depression network of successful inductors, other depressive symptoms were weakly connected, and the global symptom network was more sparse. In examining temporal stability of networks, we found that the network structures became sparser and less strongly connected over the 24-week treatment course in both groups.

Conclusions: Our findings indicate that the connectivity of depression symptom networks in opioid-dependent individuals are related to longitudinal course of opioid use and early-relapse to opioids during medication assisted treatment for OUDs. Specifically, we found that early-relapsers exhibited a more densely connected depression symptom network at bsl compared to successful inductors. *Suicidality* and *somatic symptoms* showed the largest difference in importance between early-relapse and successful inductor groups at the symptom-level. While these findings should be interpreted cautiously and require replication, our preliminary results suggest that *suicidality* and *somatic symptoms* may represent important symptom-level treatment targets among individuals with OUD.

1. Kosten TR, Rounsaville BJ, Kleber HD. A 2.5-Year Follow-up of Depression, Life Crises, and Treatment Effects on Abstinence Among Opioid Addicts. Arch Gen Psychiatry. 1986;43(8):733–738. doi:10.1001/archpsyc.1986.01800080019003
2. Subramaniam GA, Warden D, Mihajuddin A, Fishman MJ, Stitzer ML, Adinoff B, et al. Predictors of Abstinence: National Institute of Drug Abuse Multisite Buprenorphine/Naloxone Treatment Trial in Opioid-Dependent Youth. J Am Acad Child Adolesc Psychiatry; 2011,50(11):1120-118.

3. Lee JD, Nunes DV, Novo P, Bachrach K, Bailey G, et al. Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT): a multicenter, open-label, randomized controlled trial. Lancet. 2018;391 (10118):309-318.

Presenting Author	Siva Sundeep Koppolu	University of Florida

8. Impact of COVID-19 on patients who had been getting maintenance and continuous ECT

Siva Sundeep Koppolu MBBS*; Srinadh Gopinath MD; Brent Carr MD

Department of Psychiatry, University of Florida, Gainesville, FL 32606

* presenting authors

Abstract

Objective: To identify the impact of COVID on patients, categorized by their demographics for interpretation and accessibility towards their care (Electroconvulsive therapy).

Methods: We examined the patient demographics before and after the recent COVID pandemic, wherein the University of Florida, Gainesville had to stop providing the ECT to their patients for a period of time (about 6 weeks). We examined the patient groups delineated by the patient demographics 8-12 weeks before and after, such as patients' age, gender, and ethnicity.

Results: Overall, patients' ages were from 13 to 89 years, genders include males, females and transgenders and ethnicity from various backgrounds. We are reporting rates of continued follow ups (low to high) of different ages, sex and ethnicity. Reports of this research methodology did not include information beyond 8-12 weeks before and after the stoppage of ECT due to COVID pandemic.

Conclusions: There is variability in reporting key demographic, which includes age gender and ethnicity. We were planning on extending the study and be able to catch up with more populations, if some of the patients were getting the ECT once every 12 weeks or 16 weeks. However, it may be difficult to draw characteristics of participation samples within this restricted period.

Presenting Author	Steven J. Lamontagne	Queen's University and McLean Hospital

9. Inflammation links stress to poor COVID-19 outcome

Steven J. Lamontagne, MSc[1,2*], Diego A. Pizzagalli, PhD[2] and Mary C. Olmstead, PhD[1,3]

[1]Department of Psychology, Queen's University, Kingston, Ontario K7L 3N6, Canada
[2]Center for Depression, Anxiety and Stress Research, McLean Hospital/Harvard Medical School, Belmont, Massachusetts, USA
[3]Centre for Neuroscience Studies, Queen's University, Kingston, Ontario K7L 3N6, Canada

**Presenting author*

Background: Coronavirus disease 2019 (COVID-19) continues to ravage communities across the world. Despite its primary effect on the respiratory system, the virus does not solely impact those with underlying lung conditions as initially predicted. Indeed, prognosis is worsened (often fatal) in patients with pre-existing hyperinflammatory responses (e.g., hypertension, obesity, diabetes), yet the mechanisms by which this occurs are unknown. A number of psychological conditions are associated with inflammation, suggesting that these may also be significant risk factors for negative outcomes of COVID-19.

Methods: We evaluate preclinical and clinical literature suggesting that chronic stress-induced hyperinflammation interacts synergistically with COVID-19-related inflammation, contributing to a potentially fatal cytokine storm syndrome. In particular, we hypothesize that both chronic stress and COVID-19-related hyperinflammation are a product of glucocorticoid insufficiency. We discuss the devastating effects of SARS-CoV-2 on structural and functional aspects of the biological stress response and how these induce exaggerated inflammatory responses, particularly interleukin (IL)-6 hypersecretion. To support our assertion, we conducted a preclinical pilot study in healthy rats (N=24), which were assigned to a chronic mild stress (CMS) or no stress control (CTL) group. Following the CMS protocol, we measured adrenal and thymus gland weights, plasma IL-6 levels and cannabinoid type 2 (CB2) receptor expression throughout the brain.

Results: Our preliminary data revealed significant overlapping peripheral and central nervous system (CNS) dysfunction between COVID-19 patients and adult animals that were exposed to CMS. Specifically, the CMS group showed a significant positive correlation between IL-6 and adrenal weight, $r(10)=0.73$, $p=0.01$, and a significant negative correlation between IL-6 and thymus weight, $r(10)=-0.70$, $p=0.02$, confirming that stress-related dysregulation varies with inflammation. In CTL animals, IL-6 was not related to adrenal, $r(10)=0.26$, $p=0.42$, or thymus, $r(10)=0.06$, $p=0.85$, weight. Notably, relative to CTL animals, CMS animals showed significantly greater CB2 receptor expression in the hippocampus (CMS: $M=301.3$, CTL: $M=74.08$), $t(22)=9.10$, $p<0.0001$ (Cohen's $d = 3.84$), NAc (CMS: $M=81.75$, CTL: $M=22.08$), $t(22)=6.29$, $p<0.0001$ (Cohen's $d = 2.67$), and VTA (CMS: $M=118.10$, CTL: $M=95.40$), $t(15)=3.49$, $p=0.003$ (Cohen's $d = 1.60$).

Conclusions: Our results support our hypothesis that prior exposure to chronic stress should be considered a significant risk factor for adverse COVID-19-related health outcomes, given overlapping peripheral and central immune dysregulation in both conditions. We conclude by discussing how people with a history of chronic stress could mitigate their risk for COVID-19 complications, identifying specific stress-reduction strategies that can be implemented during self-isolation.

Presenting Author	Cherry Leung	University of California, San Francisco

10. Women's Perinatal and Postpartum Depression Predict Sympathetic Dominance in Infant ANS Response to Stressors over the First 6 Months of Life

Cherry Y. Leung, PhD, RN[1,2]; Sandra Niemann, PhD, RN[1]; Bruce Cooper, PhD[1]; Sandra J. Weiss, PhD, DNSc, RN[1,2]

[1] Department of Community Health Systems, University of California, San Francisco
[2] UCSF Depression Center

Background: Depression affects up to 20% of all pregnant and postpartum women. Children born to depressed mothers are at higher risk for socioemotional and cognitive problems. Yet, underlying biological mechanisms that mediate associations between maternal depression and childhood mental health outcomes remain unclear. One potential mechanism may be dysregulation of the developing autonomic nervous system (ANS), impairing the child's ability to adapt to environmental stressors and challenges with resilient responses that maintain a healthy state of arousal. One salient measure of ANS activity is heart rate variability (HRV), as it provides a dynamic index of parasympathetic and sympathetic activation in response to stressors. However, few studies have examined the relationship between maternal depression and infant HRV and those studies are inconclusive. This study aimed to determine how maternal depression during pregnancy and the postpartum would predict infant ANS activation both at rest and in response to a stressor at 1 month and 6 months of age.

Methods: 202 women completed the PHQ-9 to assess depression during their 3rd trimester of pregnancy and at 6 months postpartum. Their infants were exposed to a well-established stressor protocol at 1 month and 6 months postnatal. Electrocardiographic data was acquired continuously for the infant during baseline, stressor, and recovery periods of the protocol using MindWare's mobile technology system. We used Fast Fourier Transformation to separate HRV into various frequency bands for analysis, including very low frequency (VLF), low frequency (LF), high frequency (HF), and the LF/HF ratio. Latent growth models were computed to examine effects of maternal depression during pregnancy and the postpartum on infant HRV frequency bands at 1 and 6 months of age.

Results: 29% of women were Hispanic/Latina, 20% were African-American and 16% were Asian-American, with the remainder of European-American or mixed race. Mean age was 33.7, with a range from 19 to 47. 25% of the women had a high school education or less while 50% were college graduates. 59% were receiving some form of government assistance, with 39% requiring multiple forms of assistance. During pregnancy, 19% of the women met the threshold for clinical depression, with 8% having severe symptoms. At 6 months postpartum, 14% of the women remained above the threshold for depression, with 6% reporting severe symptoms. Pregnancy depression predicted lower baseline or tonic HRV in the VLF bandwidth (-0.27, p=0.035) as well as a higher LF/HF ratio in reactivity to the stressor (0.44, p=0.039). Maternal depression at 6 months was associated with lower HF HRV in infant reactivity to the stressor (-0.076, p=0.036).

Conclusions: Findings suggest that infants exposed to maternal depression during pregnancy had a less regulated ANS at rest, evidenced by lower power in the VLF band. Lower VLF has been associated in a number of studies with high levels of inflammation and is strongly linked to all cause morbidity and mortality in adults. Lower levels of HF HRV during reactivity to a stressor indicate vagal withdrawal and greater sympathetic nervous system arousal in response to stress among infants exposed to postpartum maternal depression. In previous research with adults, lower HF power in response to stressors has been correlated with depression as well. Lastly, the higher 6 month LF/HF ratio associated with pregnancy depression suggests a sustained effect of exposure to depression in utero on greater sympathetic arousal of infants when reacting to a stressor at 6 months of age. Taken together, results indicate a pattern of sympathetic dominance among infants exposed to maternal depression, not only in their basal or resting state ANS activity but in their reactivity to stressors. Findings could ultimately inform early interventions with mothers and infants to modulate effects of maternal depression on the infant and develop therapies to enhance infant ANS regulation.

Presenting Author	Amy Lopez	CU Anschutz Medical Campus

11. Therapeutic Groups via Video Teleconferencing and the Impact on Group Cohesion

Amy Lopez, PhD, LCSW

Background: The use of synchronous telemental health for therapy groups is a relatively new area of exploration. However, with the rapid move to telehealth during the COVID-19 pandemic, many clinicians had a need to move all clinical services online. While there is literature surrounding the use and benefits of telemental health for individual therapy sessions, less is known about using teleconferencing technology in a therapeutic group setting. While there have been some studies about using teleconferencing for psychoeducation groups, there is less known about how synchronous groups can still provide the benefits of mutual support and cohesion through a virtual platform.

Methods: A pilot study was conducted comparing group cohesion between patients who participated in a Dialectical Behavior Therapy (DBT) for Depression group via video teleconferencing and patients who participated in an in-person group. A mixed methods study was used, comparing scores on a group cohesion scale as well as qualitative follow up interviews.

Results: Findings indicate that there was development of group cohesion and support but it was different for the two groups. While both groups felt equally connected to the facilitator, there were significant differences between the online and in-person groups on the group cohesion scale. Those in the online group did not feel as connected to other group members as those in the in-person group. Findings from the group cohesion scale showed a mean score for the online group of 35.3 (sd=3.9) and a mean score for the in-person group of 40.5 (sd=2.8) ($t=3.7$, $p<.001$). While the online group did not feel as connected to the other participants, they still found value in the online group and the chance to participate remotely. Qualitative statements indicate that the convenience of the online group outweighed any negative effects of not feeling as connected as they might at an in-person group. Attendance was significantly better in the online group, suggesting that use of this technology may help to overcome barriers preventing treatment participation.

Conclusion: The use of telemental health for group therapy appears to be a viable alternative to traditional in-person groups, especially when no other treatment options are available. However, because the process may be different, facilitators may need to take extra steps to build group cohesion when members are participating remotely. This presentation will offer suggestions on ways to use the technology to help patients better connect with one another through a virtual platform so as to benefit from the supportive nature of a therapeutic group.

Presenting Author	Aaiza Malik	The Ohio State University Wexner Medical Center

12. Project DAWN: Increasing Access to Narcan for Patients

Aaiza Malik, MD[1]; Blessing Igboeli, MD[1]; Julie Teater, MD1; Julie Niedermier, MD[1]

[1]The Ohio State University Wexner Medical Center

Background: Drug overdose, whether accidental or purposeful is currently the leading cause of death in individuals under the age of 50 in the United States. Over 67,000 people died from drug overdoses in 2018, and of those deaths, almost 70% involved a prescription or illicit opioid. This is more than quadruple the number it was in 2002 (about 12,000). Much of the Midwest, including Ohio is at the epicenter of this opioid epidemic, having the second highest incidence of fatal drug overdose. Naloxone (also known as Narcan) is a medication that can reverse an overdose caused by an opioid drug. Project DAWN (Deaths Avoided With Naloxone) is Ohio's community-based overdose education and naloxone distribution program. Grant allows for funding for institution to receive free Narcan kits to be distributed to patients. The Ohio State University and OSU East were awarded the grant in July 2019.

Methods: Project DAWN at OSUWMC has been implemented at OSU Main and OSU East pharmacies, Talbot Hall (OSU's addiction medicine center), and in the community via partnership with the Columbus Rapid Response Emergency Addiction Crisis Team (RREACT). On inpatient units or the ED providers identify eligible patients to receive the Narcan kits from Project DAWN. The provider enters the order via the discharge navigator so the medication is placed on the patient's home medication list. Patient receives education from nurse on how to use kit, naloxone kit, education sheet, and patient intake form which is required by Ohio Department of Health.

Results: From November 2019 to July 2020, 917 total kits have been distributed across the OSUWMC and OSU East locations (including inpatient units and ED) as well as in the community. Of these 917 patients, only 366 have had prior experience administering Narcan in the past, making the education piece from the nurse vital. Of these 917 patients, only 108 have had formal treatment experience.

Conclusions: Given the volume, morbidity, and mortality of patients presenting to the medical center with opioid-related health issues, we continue to work collectively to keep pace and meet the challenges inherent to this tragic epidemic. Though in its early stages, Project DAWN has helped deliver naloxone kits and patient education to patients with opioid abuse, with the goal of helping to prevent future overdoses. Increasing provider awareness and education about Project DAWN can help increase its outreach and number of kits distributed on inpatient units and ED. Education about how to use administer Narcan and encouragement of formal treatment when disturbing Project DAWN Narcan are opportunities for further outreach and treatment.

References:

1. Hall, O. T., Hall, O. E., Kolodny, A., Teater, J., & Mcgrath, R. P. (2020). Assessment of Excess Mortality Associated With Drug Overdose in Ohio From 2009 to 2018. *JAMA Network Open, 3*(4). doi:10.1001/jamanetworkopen.2020.2183
2. Levin, Aaron. "Tackling Opioid Overdose Epidemic Demands Multiple Approaches." Psychiatrics News, 30 June 2017, psychnews.psychiatryonline.org/doi/full/10.1176/appi.pn.2017.7a6.

Presenting Author	Leslie Miller	Johns Hopkins University

13. Marijuana and cannabidiol attitudes, perceptions, and behaviors among youth receiving mood disorder treatment and their parents: Preliminary results from the MABS study

Christopher J Hammond MD PhD[1*]; Mary Fristad PhD[2]; Annabel Kady[1];Christopher D Schneck MD[3]; Neera Ghaziuddin MD MRCPsych[4]; Jarrod Leffler PhD[5]; Manpreet K Singh MD MS[6]; Sally Weinstein PhD[7]; Leslie Hulvershorn MD[8;] Leslie Miller MD[1*]

[1]Department of Psychiatry, Johns Hopkins University, Baltimore, MD; [2]Department of Psychiatry, Ohio State University Wexner Medical Center, Columbus, OH; [3]Department of Psychiatry, University of Colorado Anschutz Medical Campus, Aurora, CO; [4]Department of Psychiatry, University of Michigan, Ann Arbor, MI; [5]Department of Psychiatry, Mayo Clinic, Rochester, MN; [6]Department of Psychiatry, Stanford University, Palo Alto, CA; [7]Department of Psychiatry University of Illinois at Chicago, Chicago, IL; [8]Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN

* presenting authors

Background: Decriminalization, medicalization, and legalization of marijuana use across the U.S. over the past 25 years has dramatically shifted societal perceptions and use patterns among Americans. Recent hemp deregulation by the federal government has enabled cannabidiol (CBD) products to be sold as health supplements nationwide. These legislative shifts and the accompanying widespread promotion of non-evidence-based health claims about cannabinoids have unknown implications for American youth.[1-3] In the present study, we examine attitudes, perceptions, and behaviors related to marijuana and CBD product use among youth receiving treatment for mood disorders and their parents.

Methods: Data are from a sample of youth (ages 12-25 years) diagnosed with mood disorders, along with parents, recruited from NNDC child mood programs as part of an ongoing NNDC-funded study - the Marijuana and Cannabidiol Attitudes, Beliefs, and Behaviors Survey [MABS] study. Participants completed surveys querying marijuana- and CBD related attitudes, perceptions, and behaviors, including acceptability, perception of harmfulness and medical benefit, beliefs and expectancies about marijuana's and CBD's effects on mood, anxiety, and cognition, along with parent-youth communication and parenting practices. Preliminary data presented here are from a subset of participants (n=19 - 12 youth and 7 parents) recruited from the Johns Hopkins NNDC site.

Results: Preliminary single-site results showed that: (a) 33% and 27% of youth reported having a household member use medical marijuana and/or CBD respectively in the past year to treat a mental health condition; (b) all youth (100%) agreed/strongly agreed that medical marijuana and CBD products are safe and effective treatments for certain mental health conditions, with 58% and 63% agreeing/strongly agreeing that mental health providers should be recommending or prescribing medical marijuana and/or CBD for treatment of mental health conditions; (c) 58% of youth reported believing that marijuana, when used regularly, improves depression in the typical user, while 36% believed that CBD product use improves depression.

Conclusions: Our preliminary results show that youth receiving treatment for mood disorders widely perceive marijuana and CBD products as safe and effective treatments for mental health problems, including depression. These findings suggest a mismatch between youth perception[1-3] and the current evidence related to safety and efficacy of cannabinoid products for mood disorders.[4,5] Mental health clinicians and public health campaigns should provide targeted, evidence-based education to youth and parents and encourage fact-driven discussions between parents, youth, and providers about cannabinoids and mood disorders.

1. Hammond CJ, Chaney A, Hendrickson B, Sharma S. Cannabis use among U.S. adolescents in the Era of Marijuana Legalization: a review of changing use patterns, comorbidity, and health correlates. International Rev of Psychiatry. 2020; DOI: 10.1080/09540261.2020.1713056
2. O'Loughlin JL, et al. Parental Cannabis Use Is Associated with Cannabis Initiation and Use in Offspring. J Pediatr. 2019;206:142-147.e1. doi:10.1016/j.jpeds.2018.10.057
3. Mason WA, Hanson K, Felming CB, Ringle JL, Haggerty KP. Washington State Recreational Marijuana Legalization: Parent and Adolescent Perceptions, Knowledge, and Discussions in a Sample of Low-income Families. Sub Use Misuse. 2015:50(5):541-45.
4. Arias AJ, Hammond CJ, Burleson JA, Feinn R, Kaminer Y, Curry JF, Dennis ML. Temporal relationships between the change in depressive symptoms and cannabis use in youth treated for cannabis use disorder. J Substance Abuse Treatment. 2020:17:108087 https://doi.org/10.1016/j.jsat.2020.108087
5. Lucatch AM, Coles AS, Hill KP, George TP. Cannabis and Mood Disorders. Curr Addict Rep. 2018 Sep;5(3):336-345. doi: 10.1007/s40429-018-0214-y. Epub 2018 May 10. PMID: 30643708; PMCID: PMC6329464.

Presenting Author	Abigal Nash	SPONSOR: Janssen

14. Rapid Improvement Across Depressive Symptoms in Adults With Major Depressive Disorder and Acute Suicidal Ideation or Behavior Treated With Esketamine

Abigail I. Nash, MD, PhD[1]; Ibrahim Turkoz, PhD[2]; Don-Jing Fu, MD, PhD[2]; David Williamson, PhD[1]; Carol Jamison, BSc[3]; Ella Daly, MD[1]; Carla M. Canuso, MD[2]

[1]Janssen Scientific Affairs, LLC, Titusville, New Jersey, USA
[2]Janssen Research and Development, LLC, Titusville, New Jersey, USA
[3]Janssen Research and Development, LLC, Milipitas, California, USA

Background: ASPIRE I and ASPIRE II were global phase 3 studies designed to evaluate the efficacy and safety of esketamine nasal spray (ESK) versus placebo nasal spray (PBO), which was administered in the context of comprehensive standard of care (SoC; defined as initial hospitalization and initiation or optimization of antidepressant therapy), in adults with major depressive disorder (MDD) who had active suicidal ideation with intent. To further understand the rapid effect of ESK+SoC versus PBO+SoC in reducing the severity of depressive symptoms, we examined the change in individual items of the Montgomery-Åsberg Depression Rating Scale (MADRS) from baseline to 24 hours after the first dose of treatment.

Methods: This is a post hoc analysis of pooled data from 2 identically designed double-blind, placebo-controlled studies (ASPIRE I [NCT03039192], ASPIRE II [NCT03097133]) that enrolled adults with moderate to severe MDD (DSM-5 criteria, MADRS total score >28) who had active suicidal ideation with intent.[1-3] Patients were randomized (1:1) to ESK 84 mg or PBO twice weekly along with SoC antidepressant treatment for 4 weeks. Change in MADRS total score from baseline (day 1) to 24 hours after the first dose (day 2) was the primary end point. Changes from baseline and between-group differences in the MADRS individual items and total score were examined using mixed model repeated measures and analysis of covariance models. Proportions of categorical change in single items from baseline, by treatment arm, were calculated. Generalized estimating equations logistic regression models were used to estimate likelihood of clinically meaningful improvement in individual items (defined as a decrease of ≥2 points).

Results: 451 patients were included in the analysis dataset. ESK+SoC showed a statistically significant improvement based on change from baseline on the MADRS total score versus PBO+SoC (–15.8 vs –12.2; LSM difference [95% CI]: -3.6 [–5.51, –1.67]; $P < 0.001$). Improvements in each of the 10 MADRS items were observed in both treatment groups to varying degrees, with items demonstrating a higher likelihood of clinically meaningful improvement in the ESK+SoC arm compared with the PBO+SoC arm at day 2 (odds ratio and 95% CI): concentration difficulties (2.47; 95% CI: 1.57, 3.89), apparent sadness (2.13; 95% CI: 1.41, 3.24), inner tension (2.13; 95% CI: 1.36, 3.34), inability to feel (1.95; 95% CI: 1.28, 2.99), reported sadness (1.77; 95% CI: 1.18, 2.66), reduced sleep (1.67; 95% CI: 1.05, 2.67), pessimistic thoughts (1.62; 95% CI: 1.05, 2.50), lassitude (1.55; 95% CI: 1.00, 2.40), suicidal thoughts (1.27; 95% CI: 0.87, 1.87), and reduced appetite (1.15; 95% CI: 0.69, 1.93).

Conclusion: ESK+SoC treatment was efficacious in rapidly reducing depressive symptoms in adults with MDD who had active suicidal ideation with intent. The odds of achieving clinically meaningful improvement was greater with ESK+SoC compared with PBO+SoC across all MADRS items, although the treatment differences were not statistically significant for all items. Characterization of the effects of ESK+SoC on individual MADRS items over time will also be reported.

1. ASPIRE I Study. Clinicaltrials.gov website. https://clinicaltrials.gov/ct2/show/NCT03039192 (Accessed July 31, 2020).
2. ASPIRE II Study. Clinicaltrials.gov website. https://clinicaltrials.gov/ct2/show/NCT03097133 (Accessed July 31, 2020).
3. Fu DJ, Ionescu DF, Li X, et al. Esketamine Nasal Spray for Rapid Reduction of Major Depressive Disorder Symptoms in Patients Who Have Active Suicidal Ideation With Intent: Double-Blind, Randomized Study (ASPIRE I). *J Clin Psychiatry*. 2020;81(3):19m13191

Presenting Author	Casey Nicastri	McLean Hospital

15. Impact of COVID-19 on Mental Health and Cognition

Casey Nicastri[1], Reese Gawronski[1], Diego Pizzagalli[1,2], Poornima Kumar[1,2]

[1]McLean Hospital, Belmont, USA
[2]Department of Psychiatry, Harvard Medical School, Boston

Background: The outbreak of the coronavirus disease 2019 (COVID-19) caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is causing a severe economic and psychological impact on the society, although its full effects will not be known for several months. Prior outbreaks have shown that quarantine measures and impact of social isolation have resulted in negative psychological impact. Similarly, recent studies from China and US have reported higher levels of depression, anxiety and posttraumatic stress symptoms (Wang et al 2020; Zhang et al 2020; Nelson et al 2020). Laboratory-induced stressors have shown to impair decision making and social processing. However, these stressors fail to encompass the full emotional and cognitive load created by COVID-like pandemics. The aim of the study is to assess the psychological impact of COVID on decision making by investigating associations of state measures of mood, anxiety and stress with performance on decision making tasks longitudinally over 12 weeks.

Methods: As of August 7th, 654 individuals have participated in this study and completed surveys assessing the impact of COVID on their daily life, pandemic stress, mental health and cognitive games assessing decision making. About 345 individuals completed these surveys again at 2 weeks and 191 individuals also completed the 4 week sessions.

Results: Consistent with prior pandemics, ~40% of participants reported to be moderately to severely depressed and anxious. Similarly, around 45% of participants scored in the high worry category. These results show the impact of COVID-19 on mental health. We also found that people who have had COVID-19 relied on social support from significant other compared to individuals who did not have COVID. One of the interesting findings was a positive correlation between resilience and pandemic stress levels ($r = 0.3$, $p = 0.001$), implying that when faced with more COVID related stressors, people are more likely to view themselves as more resilient.

7. **Conclusions:** It is critical to understand how COVID-induced stressors affects an individual as stress has been linked to various health problems and the onset of psychiatric disorders. Our study will help us understand the impact of global pandemic on mental health and cognition and help us develop effective interventions in future.

Presenting Author	Nicolas Nuñez	Mayo Clinic

16. An Update On The Efficacy And Tolerability Of Oral Ketamine For Major Depression: A Systematic Review And Meta-Analysis

Nicolas A Nuñez, MD, MS[1], Boney Joseph, MBBS[1,2], Mehak Pahwa, MD[1], Ashok Seshadri, MD[1], Larry Prokop, MLS[3], Simon Kung, MD[1], Kate Schack, MD[1], Jennifer VandeVoort, MD[1], Mark A Frye, MD[1], Balwinder Singh MD, MS[1]

1. Department of Psychiatry and Psychology, Mayo Clinic, Rochester, Minnesota, USA.
2. Department of Neurology, Mayo Clinic, Rochester, Minnesota, USA
3. Mayo Medical Libraries, Mayo Clinic College of Medicine, Rochester, Minnesota, USA

Background: Intravenous Ketamine has shown robust antidepressant efficacy although other routes of administration are currently needed. We conducted a systematic review and meta-analysis of studies evaluating the efficacy and tolerability of oral ketamine for depression.

Methods: A comprehensive search of major electronic databases from inception to April 2020 was performed. Studies of oral ketamine for depression, from case series to randomized clinical trials, were eligible. Randomized controlled trials were included in a meta-analysis, focusing on response, remission, time to effect, and side effects.

Results: A total of 917 articles were identified with 890 studies screened, yielding a total of 10 studies included in our systematic review.Three randomized controlled trials (RCTs) (N=162, mean age 37.9±9.5 years, 58.6% females) were included in the meta-analysis. Pooled analysis suggested a significant antidepressant effect of oral ketamine (SMD: -0.75; 95% CI: -1.08, -0.43; p<0.0001; I^2=0%) although remission rates (RR: 2.81; 95% CI:0.95, 8.28;p=0.06) and response rates (RR: 2.62; 95% CI:0.94,7.33; p=0.06) were marginal compared to placebo at the endpoint. Oral ketamine antidepressant effects seemed to take effect at the 2nd week (SMD:-0.72; 95% CI: -1.21, -0.22; p=0.001; I^2=0%). There were no significant differences in the overall side-effects between oral ketamine and the placebo group (RR 1.28, 95% CI: 0.89-1.83; p= 0.19).

Conclusion: This focused meta-analysis of oral ketamine suggests a marginal efficacy for major depressive disorder without increased risk of adverse events. Further larger sample studies are needed to confirm these preliminary findings, analyzing differential response/remission rates by affective disorder, optimal dosing strategies, and its long-term effects.

Presenting Author	Benjamin Pace	University of Iowa

17. The Relationship between Clinical Outcome and Heart Rate Variability during Repetitive Transcranial Magnetic Stimulation

Benjamin D Pace, MS[1], Nicholas T Trapp, MD, MS[1,2]

[1]Department of Psychiatry, University of Iowa, Iowa City, Iowa
[2]Department of Psychiatry and Behavioral Sciences, Stanford University, Stanford, California

Background: rTMS is a technique that can be used to target and modulate focal brain areas for therapeutic benefit, such as stimulation of the left dorsolateral prefrontal cortex (DLPFC) for treatment of Major Depressive Disorder (MDD). As the DLPFC is a functionally heterogeneous target with significant inter-subject variability, biomarkers of adequate target engagement are critically needed and currently lacking. New avenues of research aim to identify stimulation-induced physiological biomarkers to serve as indicators of successful targeting. One promising biomarker is rTMS-induced heart rate change. There is evidence to suggest site-specific brain stimulation engages a prefrontal cortex-vagus nerve output pathway to induce downstream decelerations in heart rate.[1,2] In this study, heart rate variability was recorded during the first and final treatment visits for patients in the University of Iowa TMS Clinic receiving rTMS of the left DLPFC for depression therapy. The researchers sought to determine whether changes in heart rate occurring in the first minute of rTMS treatment could predict treatment response in a clinical setting.

Methods: We enrolled 16 patients (6 females; mean age=46; SD=17) from the TMS Clinic at the University of Iowa Hospitals & Clinics (UIHC) who were diagnosed with treatment-resistant MDD (i.e. failure of three or more antidepressant medications in the current episode) and deemed eligible for TMS treatment by clinical staff at UIHC. Within-session ECG was collected with BIOPAC MP150. To determine clinical outcome of the treatment course, percent change in scores for the PHQ-9 and the MADRS were calculated. The researchers generated Z-scores depicting stimulation-induced heart rate accelerations or decelerations following the methods described in Iseger et al. (2017).[1]

Results: The average heart rate change according to Z-score was 4.827, suggesting on average a large stimulation-induced heart rate deceleration due to rTMS. Only two participants displayed decreases (negative Z-scores) in overall heart rate across the first three stimulations. Linear regression analyses for the clinical scales reveal that percent change in clinical scale scores does not significantly correlate with heart rate Z-score change during TMS treatment. This lack of a significant relationship was noted for PHQ-9 scores ($F(1,14)=1.305$, $p=0.272$, $R^2=0.085$) and MADRS scores ($F(1,14)=0.141$, $p=0.713$, $R^2=0.0099$).

Conclusion: While rTMS-induced heart rate decelerations were observed consistently in this sample, its relationship with clinical outcome is unclear. Counter to our hypothesis, there was no significant association between during-stimulation HR decelerations and depressive symptom change as measured by either of the scales collected (PHQ-9 and MADRS). These findings suggest that the relationship between TMS-induced HR change and clinical treatment response is complex. Consequently, the utility of TMS-induced HR decelerations as a marker of autonomic network engagement or, further, as a predictive biomarker of treatment response, is not robust and may require a larger dataset to identify any potential relationship. Further research could investigate stimulation site connectivity using functional connectivity MRI or diffusion tractography (DTI) to better understand the network patterns and neuroanatomical relationships underlying rTMS-induced heart rate decelerations in humans.

Presenting Author	Alexandre Paim Diaz	University of Texas Health Science Center at Houston

18. White matter microstructure in the uncinate fasciculus is associated with anhedonia

Alexandre Paim Diaz[1], Benson Mwangi[1], Brisa S. Fernandes[1], Marsal Sanches[1], Jair C. Soares[1]

1. University of Texas Health Science Center at Houston, Louis A. Faillace, MD, Department of Psychiatry and Behavioral Sciences, Houston, Texas.

Background: anhedonia has been reported as negatively associated with fractional anisotropy (FA) in the uncinate fasciculus (UF) in patients with major depression (1). The UF is a neural tract associated with learning from reward and social reward processing and connects the orbitofrontal cortex with the nucleus accumbens, brain regions which activity has been associated with reward responsiveness (2-4). In this study we investigated whether white matter microstructure in the UF as quantified through FA is associated with anhedonia across participants with bipolar disorders (BD), major depressive disorder (MDD) and relatives of patients with BD.

Methods: 85 participants (MDD: 5 [5.9%], BD type II [BD II]: 7 [8.2%], BD type I [BD I]: 49 [57.6%], and BD relatives: 24 [28.3%]) underwent diffusion tensor imaging (DTI) imaging. DTI data were pre-processed using Freesurfer and Tracula, and FA, mean, axial and radial diffusivity - MD, AD and RD, of the UF were computed (5). Presence of anhedonia was considered as at least a score of 1 in the item 8 “inability to feel” of the Montgomery Asberg Depression Rating Scale (MADRS) scale. General linear model was applied to compare participants with and without anhedonia controlling for age and sex.

Results: 60 participants were female (70.6%), and the mean age of the participants was 34 years old ±11 standard deviation (SD). The groups with (28 [32.9%]) and without (57 [67.1]) anhedonia did not differ regarding age (p=0.06) and sex (p=0.53). The group with anhedonia presented significantly lower mean FA in the left UF compared to the group without anhedonia (0.412 vs. 0.424, p=0.04) and a trend for association in the right UF (0.411 vs. 0.423, p=0.07). The difference for both left UF and right UF were significant after controlling for age and sex (p=0.02 and p=0.04), but did not survive when psychiatric medication was included in the model (p=0.07 and p=0.09, respectively).

Conclusions: lower FA in the bilateral UF was significantly associated with anhedonia in people with high risk for mood disorders or current mood disorders. Future interventions for anhedonia guided by the precision medicine paradigm, with the UF as a target, are promising and calls for future studies.

References

1. Dillon DG, Gonenc A, Belleau E, Pizzagalli DA. Depression is associated with dimensional and categorical effects on white matter pathways. Depression and anxiety. 2018;35(5):440-7.
2. Baydin S, Yagmurlu K, Tanriover N, Gungor A, Rhoton AL, Jr. Microsurgical and Fiber Tract Anatomy of the Nucleus Accumbens. Operative neurosurgery. 2016;12(3):269-88.
3. Zhang B, Lin P, Shi H, Ongur D, Auerbach RP, Wang X, et al. Mapping anhedonia-specific dysfunction in a transdiagnostic approach: an ALE meta-analysis. Brain imaging and behavior. 2016;10(3):920-39.
4. Von Der Heide RJ, Skipper LM, Klobusicky E, Olson IR. Dissecting the uncinate fasciculus: disorders, controversies and a hypothesis. Brain : a journal of neurology. 2013;136(Pt 6):1692-707.
5. Yendiki A, Reuter M, Wilkens P, Rosas HD, Fischl B. Joint reconstruction of white-matter pathways from longitudinal diffusion MRI data with anatomical priors. NeuroImage. 2016;127:277-86.

Presenting Author	Grace Park	Johns Hopkins University

19. Do depressive symptoms and their course influence the effects of Attention Deficit Hyperactivity Disorder treatment response on smoking cessation in ADHD smokers?

Henry Mitchell[1*]; Elise Melsom[1]; Grace Park MPH[1]; Christopher J Hammond MD PhD[1*]

1. Department of Psychiatry & Behavioral Sciences, Johns Hopkins University, Baltimore, MD 21224
* presenting authors

Background: Attention deficit hyperactivity disorder (ADHD) is associated with elevated rates of tobacco smoking, and the co-occurrence of ADHD with tobacco/nicotine dependence may impact treatment outcomes for both conditions.[1] ADHD smokers may "self-medicate" with nicotine to reduce their ADHD symptoms *and/or* to reduce depression, a frequent comorbidity with ADHD.[2,3] How depressive symptoms change during stimulant-based ADHD treatment and relate to treatment efficacy for ADHD and tobacco cessation is poorly understood. This post-hoc analysis evaluated the effects of depressive symptoms and course on the effectiveness of ADHD treatment to enhance tobacco cessation in ADHD smokers enrolled in a multisite pharmacotherapy trial.

Methods: Patient-level data from a randomized double-blind placebo-controlled 11-week trial of OROS-methylphenidate (OROS-MPH) for treatment of ADHD and to enhance tobacco cessation in 204 adult tobacco smokers (ages 18–55 years) meeting DSM-IV criteria for ADHD (NIDA-CTN-0029[4]) was used. Participants were randomized to OROS-MPH (n=110) or placebo (PBO) (n=105) and received weekly individual smoking cessation counseling and a daily 21 mg nicotine patch. Variables of interest included *depression* (assessed via Beck Depression Inventory-II (BDI) total score at baseline (BSL), week-6, and week-11), *ADHD symptoms* (assessed via DSM-IV ADHD rating scale (ADHS-RS)), and *smoking outcomes* (prolonged abstinence and change in cigarettes per day (CPD)). Generalized estimating equation models (GEE) and logistic regressions examined depression and depression x treatment condition effects on ADHD and smoking outcomes.

Results: Depressive symptoms were common at BSL (22%) and 34.1% of participants met DSM-IV criteria for a *lifetime* major depressive disorder. *Changes in depression*: ADHD smokers had significant reductions in BDI scores from BSL to week-11 ($\chi 2=42.87$, *p< 0.001*), with OROS-MPH, relative to PBO, participants having a significantly greater decrease in BDI scores (*57% vs. 31%* reduction, *p=0.01*). *Depression effect on ADHD*: Elevated BDI scores at week-6 ($\chi^2=9.19$, *p= 0.002)* and week-11 ($\chi^2=9.85$, *p= 0.002)*, but not BSL, were associated with a smaller reduction in ADHD-RS scores during treatment. A greater reduction in BDI scores from BSL to week-11 ($\chi^2=31.50$, *p <0.0001*) was associated with greater improvements in ADHD-RS scores during treatment. *Depression effects on smoking*: Increased BDI scores at week-6 ($\chi^2=4.61$, *p=0.03*) but not BSL or week-11 and a smaller reduction in BDI scores from BSL to week-6 ($\chi^2=6.13$, *p=0.01*) were associated with increased post-quit CPD.

Conclusions: These preliminary results suggest that ADHD treatment is associated with reductions in depression among ADHD smokers with mild-to-moderate depressive symptoms, and that depressive symptoms and course portend poorer ADHD outcomes and may influence tobacco cessation efficacy. Improved understanding of the complex temporal relationships between attention, mood, and tobacco smoking in ADHD smokers may guide symptom-related treatment matching and symptom-targeted interventions for ADHD smokers.

1. Pomerleau OF, Downey KK, Stelson FW, Pomerleau CS. Cigarette smoking in adult patients diagnosed with attention deficit hyperactivity disorder. J Subst Abuse. 1995; 7:373–378. [PubMed:8749796]
2. Wilens T, Vitulano M, Upadhyaya H, et al. Cigarette smoking associated with attention-deficit hyperactivity disorder. J Pediatr. 2008; 153:414–419. [PubMed: 18534619]
3. Berlin I, Chen H, Covey L.S. Depressive mood, suicide ideation and anxiety in smokers who do and smokers who do not manage to stop smoking after a target quit day. Addiction. 2010; 105:2209– 2216. DOI: 10.1111/j.1360-0443.2010.03109.x. [PubMed: 20840207]
4. Winhusen, T. M., Somoza, E. C., Brigham, G. S., Liu, D. S., Green, C. A., Covey, L. S., ... & Lewis, D. F. (2010). Does treatment of Attention Deficit Hyperactivity Disorder (ADHD) enhance response to smoking cessation intervention in ADHD smokers? A randomized trial. *The Journal of clinical psychiatry*, *71*(12), 1680.

Presenting Author	Rebecca Salomon	University of California San Francisco

20. Redesigning Suicide Research with Postpartum Women During the COVID-19 Pandemic

Becky Salomon, PhD, RN, PMHNP-BC[1,2]; Katie Reeves, MS, PMHNP-BC[1,2]; Sandra J. Weiss, PhD, DNSc, RN[1,2]

[1]Department of Community Health Systems, University of California, San Francisco

[2]UCSF Depression Center

Background: Suicide is the second leading cause of death in postpartum women, accounting for about 20% of postpartum deaths. Thus, research to better understand mechanisms underlying suicide risk during the postpartum is critical. Feasibility is inherently challenging for research on the sensitive subjects of suicidal ideation, past suicide attempts, and self-harming behaviors. With the onset of the COVID-19 global pandemic, challenges of participant recruitment and safe data collection have been magnified. In this poster, we will describe necessary changes to recruitment and data collection following the onset of COVID-19 for an NIH-funded, mixed methods study to examine HPA axis dysregulation as a potentially heritable phenotype of suicide that may significantly increase risk. Measures of maternal cortisol and depression had been acquired before the pandemic at 3 time points from pregnancy through 12 months postpartum. Similarly, measures of infant cortisol reactivity and emotional distress had been acquired at 3 postnatal time points. However, our team was just beginning to collect more in depth follow-up measures of maternal suicidal ideation and behavior as well as further cortisol assessment when in person contact was precluded by the pandemic's shelter-in-place orders.
Methods: Depression was measured using the PHQ-9 and the Major Depression Disorder Scale of the Psychiatric Diagnostic Screening Questionnaire. Women who had reported suicidal ideation at any point during their completion of the 4 depression assessments were invited to participate in our follow-up study, resulting in a sample of 30 out of 190 enrolled women. In the original research design, we planned to conduct one on one interviews between participants and a research team member in the woman's home. The interview was built around the Columbia Suicide Severity Rating Scale, with qualitative probes for each item to elicit the woman's nuanced feelings and thoughts regarding their suicidal ideation, plans and attempts. In addition, they completed an additional measure of depression and the researcher collected a hair specimen for cortisol analysis. In March of 2020, the University of California, San Francisco shut down all non-essential research. Our research remained on hold until the middle of May when UCSF administration indicated that research could restart if strict guidelines were employed, requiring daily health screening, use of personal protective equipment for researchers and research participants, sanitization, and social distancing protocols. At that time, the research team considered all options for redesigning the study to meet the guidelines while still addressing the research aims in an effective way.

Results: Our poster presentation will highlight the options we considered as well as the changes that were ultimately made in 5 key areas: 1) approaches to recruitment for the follow up study, 2) reliable collection of biospecimens, 3) sensitive, confidential interviewing for suicide when individuals are sheltered together in often dense and constrained environments, 4) assuring the opportunity for in depth, meaningful discussion when the woman has ongoing responsibility to care for children who are sheltered with her in the home, and 5) suicide safety protocols.

Conclusions: Although our primary focus was on women at risk for suicide in the postpartum, the adaptations we made have broad utility for all suicide research. The redesign of our study may provide a successful model for others to consider as researchers continue their essential suicide studies in a new research world.

Presenting Author	Erica Vest-Wilcox	University of Michigan

21. A pilot study of functional remediation for bipolar disorder: feasibility, acceptability and efficacy

Erica Vest-Wilcox LMSW, Ahmad Abu-Mohammad MD, Cynthia Burton PhD, Joel Peterman PhD, Kelly Ryan PhD, Daniela Lopez MPH, Elena Lamping BS, Melvin McInnis MD, Ivana Senic, and Sagar V. Parikh MD

Background: Bipolar disorder is a recurrent, episodic mood disorder that affects over 1% of the world's population and ranks seventh among diseases causing disability. Between 40% and 60% of patients with bipolar disorder have neurocognitive impairment in areas such as memory, concentration, and task completion. The main forms of treatment, medication and psychotherapy, are quite helpful for symptoms, but only slightly aid functional recovery. A single randomized controlled trial in Barcelona, Spain demonstrated a new type of treatment, Functional Remediation (FR) for Bipolar Disorder, as effective in improving cognition and functioning.

Methods: We aimed to replicate the Barcelona Study in an American population. Individuals ages 18-55 with Bipolar Disorder were enrolled and assigned to the Functional Remediation (FR) intervention. The intervention, delivered by two neuropsychologists and psychiatrist, consisted of 21 weekly group sessions which involved interactive exercises covering attention, memory, problem solving, multitasking, stress management, communication, and organization. Comprehensive clinical (mania and depression scales), neuropsychological, and functional assessments (Functional Assessment Short Test (FAST) scale) at baseline and post-treatment were conducted. The primary outcome consisted of enrollment, attendance, and satisfaction as a measure of feasibility and acceptability.

Results: 30 individuals that were screened at baseline. Of the 30, 25 were considered eligible and were enrolled in the study and split into two groups, groups A and B. Three were ineligible due to their low functional impairment, one did not have a bipolar diagnosis, and one died. Only 10 of the original 25 were judged to have received an adequate dose and completed the intervention. An adequate dose of FR was defined as attending at least 16/21 sessions.

In group A, attendance was 78% with high satisfaction, in group B, 25% attended regularly with moderate satisfaction. Pre-post FAST scores did not differ significantly. However, 5 participants demonstrated 'high' cognitive impairment at baseline, and 3 of those individuals improved to 'below impairment threshold' following the FR intervention.

Conclusion: We conducted a pilot study of the Barcelona Functional Remediation intervention for Bipolar Disorder. Satisfaction with the intervention was promising, but retention and impact on functioning ratings were low. Those with more severe cognitive impairment may show the greatest benefit. Future directions include enhancing enrollment and retention and modifying the intervention, possibly condensing it into fewer but more intense sessions and adding more homework, to promote adherence and efficacy.

Presenting Author	Hannah Williams	Michigan State University & Pine Rest Christian Mental Health Services

22. Concerns About Ketamine Treatment Practices in the Community: A Report of Two Cases

Dan Tuinstra MD[1,2*], Hannah Williams MD[1,2*], & Timothy Todd MD[1,2]

1 Pine Rest Christian Mental Health Services, Grand Rapids, MI 49548
2 Michigan State University, East Lansing, MI 48824
*presenting authors

Background: Ketamine, safely used as an anesthetic since 1970, is a new treatment option, at lower doses, for treatment-resistant depression (TRD) and other psychiatric conditions. Data shows non-psychiatric medical professionals are prescribing racemic (R+S enantiomers) intravenous (IV) and intranasal ketamine for psychiatric conditions at variable doses and without standardized safety monitoring. By contrast, the newly FDA-approved intranasal S-enantiomer, esketamine, for TRD requires Risk Evaluation and Mitigation Strategy (REMS) enrollment and direct safety monitoring.

Case Descriptions: We present two cases of patients diagnosed and treated with IV and intranasal ketamine at a gastroenterology clinic: A 22-year-old female with generalized anxiety disorder (GAD) and post-traumatic stress disorder (PTSD) with previous sub-therapeutic trials of two antidepressants, and a 24-year-old female with PTSD, GAD, unspecified bipolar disorder and borderline personality disorder with previous insufficient trials of mood stabilizing and antidepressant medications. Both were treated with IV ketamine & unmonitored home intranasal ketamine administration with initial improvement in mood. They reported side effects including inability to drive safely, blurred vision, and suicidal ideation requiring hospitalization.

Conclusion: Given increasing psychiatric interest in ketamine, these cases highlight concerns about ketamine prescribing practices in the community, caring for patients receiving ketamine from non-psychiatric providers for psychiatric conditions, and levels of evidence for different indications. Patient safety, protocol for care transitions, scope of practice for non-psychiatrists, and limited evidence or long-term safety data, are all important factors to consider as ketamine becomes a more common treatment option for psychiatric disorders.

Presenting Author	Jesse H. Wright	University of Louisville

23. Computer-assisted Cognitive-behavior Therapy vs Treatment as Usual for Depression in Primary Care

Jesse H. Wright, M.D., Ph.D. (1); Tracy D. Eells, Ph.D. (1); Jesse J. Owen, Ph.D. (2); Becky Antle, Ph.D., MSSW, LMFT (3); Laura Bishop, M.D. (4); Renee Girdler, M.D. (5); Lesley Harris, Ph.D., MSSW (3); Brent Wright, M.D. (6); M. Jason Wells, M.D. (7); Rangaraj Gopalraj, M.D. (8); Michael Eli Pendleton, M.D. (9)

[1]Department of Psychiatry and Behavioral Sciences, University of Louisville School of Medicine, Louisville, Kentucky
[2]Department of Counseling Psychology, University of Denver, Denver, Colorado
[3]Kent School of Social Work, University of Louisville, Louisville, Kentucky
[4]Department of Medicine, University of Louisville School of Medicine, Louisville, Kentucky
[5]Family Medicine, Norton Healthcare, Crestwood, Kentucky
[6]Department of Family and Geriatric Medicine, University of Louisville School of Medicine, Glasgow, Kentucky
[7]Family Medicine, Baptist Health Medical Group Primary Care, Louisville, Kentucky
[8]Geriatric Medicine, Norton Healthcare, Louisville, Kentucky
[9]Family Medicine, Baptist Health Medical Group Primary Care, Louisville, Kentucky

Objective: Assess the effectiveness and durability of a clinician-supported method of computer-assisted cognitive-behavior therapy (CCBT) compared to treatment-as-usual (TAU) in primary care patients with depressive symptoms.

Method: Primary care patients (n = 175) who scored 10 or higher on the Patient Health Questionnaire-9 (PHQ-9) were randomly assigned to a 12-week course of CCBT or TAU. Treatment with CCBT included use of the online computer program "Good Days Ahead" supported with up to 12 weekly phone calls with a therapist. Outcome was assessed with the PHQ-9, Generalized Anxiety Disorder-7 (GAD-7), and the Satisfaction with Life Questionnaire (SWLS) administered before treatment, after 6 and 12 weeks, and 3 and 6 months after treatment was completed.

Results: There were significant treatment effects favoring CCBT for all measures at all time points with one exception. There was no longer a significant effect for CCBT vs TAU for the GAD-7 at the 6-month follow-up. The primary treatment goal was to reduce symptoms of depression, and effect sizes on the PHQ-9 comparing CCBT and TAU showed enduring benefit at the 3- and 6- month follow-up time points. Mean effect sizes for the PHQ-9 in the ITT analysis increased from 0.37 post-treatment to 0.52 at the 6-month follow-up.

Conclusion: CCBT significantly improved outcomes for depression, anxiety, and quality of life.