AAPdN Virtual Conference – Accepted Abstracts

AAPdN Virtual Conference – Accepted Abstracts

1

Title
Targeted Neurocognitive Assessment with Pediatric Cancer Survivors

Authors
April R. Abrego, Psy.D. 1
April.Abrego@bjc.org
Christopher Bosworth, Ph.D. 1
Christopher.Bosworth@bjc.org
Suzanne Pierson, Ph.D., ABPP 1
Suzanne.Pierson@bjc.org

1One Children’s Place
St. Louis, MO 63110
314-454-6069

Academic Affiliation: Washington University School of Medicine

ABSTRACT

Objectives: Approximately 35% to 60% of childhood cancer survivors experience neurocognitive late effects due to treatment-related toxicity (Jacola et al., 2021). Neuropsychological evaluation is standard in survivorship care, but considerable barriers exist, necessitating practical testing options. Researchers (Krull et al., 2008) have proposed targeted batteries with good predictive validity to screen this population. Our study evaluated outcomes of a late-effects assessment clinic using a fixed/targeted battery. We hypothesized that roughly one-third of participants would show impairment, consistent with late-effects literature.

Methods: Participants (n=25; 44% female; 88% White; 8% Black; 4% Asian) were all post-treatment and had no pre-existing conditions (other than cancer) or brain tumors. All spoke English and ranged in age from 4 to 22 years. The battery (fixed-by-age) assessed six areas: general intellect, processing speed, working memory, executive functioning, verbal fluency, and fine motor speed using a combination of SB-5 Routing subtests, WASI-II FSIQ-2, WPPSI-IV Cancellation, WAIS-IV Digit Span, DAS-II Digits Forward/Backward, Trails A/B, DKEFS Trails and Verbal Fluency, NEPSY-II Word Generation, Purdue Pegboard, and Grooved Pegboard. Impairment (‘fail’) was defined as one standard score (SS) < 70 or two SS < 80 (Krull et al., 2008). Descriptive statistics and an ANOVA were used to define group (pass vs. fail) characteristics and evaluate differences across scores, demographics, and medical factors.

Results: As predicted, 32% of participants demonstrated neurocognitive impairment. Of those, 88% failed ≥ 2 domains. There were significant differences between the fail and pass groups (p ≤ .05) in non-verbal and overall IQ, semantic verbal fluency, and fine-motor speed. Participants who failed were recommended to return for a comprehensive evaluation; 38% returned.

Conclusions: Our results corroborate that roughly one-third of pediatric cancer survivors demonstrate neurocognitive impairment following treatment. Results also further the utility of a targeted battery to efficiently identify impairment and need for further evaluation with this population.

References
Krull, K. R., Okcu, M. F., Potter, B., Jain, N., Dreyer, Z., Kamdar, K., & Brouwers, P. (2008). Screening for neurocognitive impairment in pediatric cancer long-term survivors. Journal of clinical oncology: Official journal of the American Society of Clinical Oncology, 26(25), 4138–4143.
Jacola, L., Partanen, M., Lemiere, J., Hudson, M., Thomas, S. (2021) Assessment and monitoring of neurocognitive function in pediatric cancer. Journal of Clinical Oncology, 39(16), 1696-1704, DOI: 10.1200/JCO.20.02444
The coronavirus disease 2019 (COVID-19) is caused by the SARS-CoV-2 virus and most individuals who contract the virus experience mild to moderate respiratory illness (WHO, 2021). The COVID-19 pandemic has been associated with a variety of reported medical, mental health, and social implications in adults and children. Research regarding the impact of COVID-19 on neurocognitive functioning has primarily focused on adults, especially older adults, who are at a higher risk for age-related neurocognitive decline. Less research is available regarding the effects of COVID-19 on children’s neurocognitive functioning. Thus, this poster aims to review the scant literature on the late effects of pediatric COVID-19.

**Data Selection:** Literature was obtained via searches of journals available in the following databases: APA PsychArticles, APA PsychInfo, ERIC, Medline, and Google Scholar using combinations of the following search terms: ‘coronavirus’, ‘covid-19’, or ‘sars-cov-2’ AND ‘child’, ‘children’, ‘youth’, ‘adolescent’, ‘pediatric’, ‘infant’, ‘toddler’, ‘juvenile’, or ‘young adult’ AND ‘memory’, ‘cognition’, ‘attention’, ‘concentration’, ‘working memory’, ‘executive function’, ‘executive dysfunction’, ‘inhibition’, ‘planning’, ‘shifting’, ‘switching’, ‘verbal fluency’, ‘language’, ‘processing speed’, ‘psychomotor’, ‘visual’, ‘visuospatial’, or ‘intelligence’. AND ‘neuropsychology’ or ‘neuropsychological.’ A total of 11 peer-reviewed articles were deemed eligible for inclusion.

**Data Analysis:** The 11 relevant articles were reviewed and synthesized. Information regarding neurocognitive functioning in children was extracted from each study.

**Conclusions:** Overall, across all the studies, it was found that COVID-19 has impacted many domains of children’s neurocognitive functioning (e.g., memory, attention, executive functioning, language, and intelligence). The literature on this topic is still emerging, and it is not yet clear if these deficits are chronic or if the functioning will return to baseline. If these deficits prove to be permanent, then future research should investigate treatment and resources to support the children both at school and at home.

3

**Title**

Inadequate Parenting, Autoimmune Inflammatory Reactions, and Poor Mental Health Outcomes

**Authors**

Taylor S. Bucher, BA

Sarah Chernoff, M.B.A.

Kristine M. Jacquin, Ph.D.

1Fielding Graduate University

2020 De La Vina Street

Santa Barbara, CA 93105

(317) 519-4387

**ABSTRACT**

**Theoretical/Commentary:**

**Objectives:** Inadequate or abusive parenting is directly linked with poor mental health outcomes in children (Felitti et al., 1998; Oshri et al., 2020). Harmful parenting can lead to autoimmune inflammatory reactions in children, which has been connected to autism spectrum disorder symptoms (ASD; Ohja et al., 2018; Oshri et al., 2020; Savino et al., 2020). Research indicates numerous variables (e.g., parenting styles, neurobiological factors) impact an autistic child’s attachment style (Temelturk et al., 2021). However, there is limited literature on how the immune system affects attachment. Intentions of this commentary are to challenge the current understanding of how the autoimmune system is associated with parenting styles for children with autism.

**Discussion:** Previous research reveals ASD symptoms influence parent burnout and reactions including overprotective anduninvolved parenting that negatively affect autistic children (Teague et al., 2018; Temelturk et al., 2021). In addition, abusive parenting is associated with increases in autoimmune inflammatory reactions, and interactions between genes and parenting are associated with externalizing and antisocial childhood behaviors (Bejers et al., 2020; Sulik et al., 2012). In contrast, attachment
theory suggests that environmental factors directly lead to childhood behavioral disorders (Adshead, 2018; Beijers et al., 2020). To reconcile the two opposing explanations, Sulik et al. (2012) proposed that genes influence more than predisposition for childhood mental disorders. Behaviors such as noncompliance and aggression may manifest in infancy, which may lead to inadequate or abusive parenting (Sulik et al., 2012).

**Conclusion:** Researchers and practitioners must consider a multifaceted approach to the relationships between parenting styles and autism symptoms. There may be a nonlinear relationship, as genetic predisposition for ASD and other disorders may lead to behaviors in infancy and early childhood that influence negative parenting, and negative parenting can result in neuroinflammation which influences the expression of ASD and other disorders.

**References**

Adshead, G. (2018). Security of mind: 20 years of attachment theory and its relevance to psychiatry. *The British Journal of Psychiatry, 213*(3), 511-513. https://doi.org/10.1192/bjp.2018.104

Beijers, R., Hartman, S., Shaile, I., Hastings, W., Mattern, B. C., de Weerth, C., & Belsky, J. (2020). Testing three hypotheses about effects of sensitive-insensitive parenting on telomeres. *Developmental Psychology, 56*(2), 237-250. https://doi.org/10.1037/dev0000879

Kulasinghe, K., Whittingham, K., & Mitchell, A. E. (2021). Mental health, broad autism phenotype and psychological inflexibility in mothers of young children with autism spectrum disorder in Australia: A cross-sectional survey. *Autism: The International Journal of Research and Practice, 25*(5), 1186-1202. https://doi.org/10.1177/13623613219864625

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adult childhood experiences (ACE) study. *American Journal of Preventive Medicine, 14*(4), 245-258. https://doi.org/10.1016/S0749-3797(98)00017-8

Ohja, K., Gozal, E., Fahnestock, M., Cai, L., Cai, J., Freedman, J. H., Switala, A., El-Baz, A., & Barnes, G. N. (2018). Neuroimmunologic and neurotrophic interactions in autism spectrum disorders: Relationship to neuroinflammation. *Neuromolecular Medicine, 20*(2), 161-173. https://doi.org/10.1007/s12017-018-8488-8

Oshri, A., Duprey, E. B., Liu, S., & Ehrlich, K. B. (2020). Harsh parenting and youth systemic inflammation: Modulation by the autonomic nervous system. *Health Psychology, 39*(6), 482-496. https://doi.org/10.1037/hea0000852

Savino, R., Carotenuto, M., Polito, A. N., Di Noia, S., Albenzio, M., Scarinci, A., Ambrosi, A., Sessa, F., Tartaglia, N., & Messina, G. (2020). Analyzing the potential biological determinants of autism spectrum disorder: From neuroinflammation to the kynurenine pathway. *Brain Sciences, 10*(9), 631. https://doi.org/10.3390/brainsci10090631

Sulik, M. J., Eisenberg, N., Lemery-Chalfant, K., Spinrad, T. L., Silva, K. M., Eggum, N. D., Betkowski, J. A., Kupfer, A., Smith, C. L., Gaertner, B., Stover, D. A., & Verrelli, B. C. (2012). Interactions between serotonin transporter gene haplotypes and quality of mothers' parenting predict the development of children's noncompliance. *Developmental Psychology, 48*(3), 740-754. https://doi.org/10.1037/a0025938

Teague, S. J., Newman, L. K., Tonge, B. J., Gray, K. M., & the MHYPeDD team. (2018). Caregiver mental health, parenting practices, and perceptions of child attachment in children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 48*(8), 2642-2652. https://doi.org/10.1007/s10803-018-3517-x

Temelturk, R. D., Yurumez, E., Cikili Uytun, M., & Oztop, D. B. (2021). Parent-child interaction, parental attachment styles and parental alexithymia levels of children with ASD. *Research in Developmental Disabilities, 112*, Article 103922. https://doi.org/10.1016/j.ridd.2021.103922

**Title**

Navigating Synergistic Social Consequences of COVID-19 and Congenital Heart Disease

**Authors**

Cap, Caitlyn J., M.A.¹

caitlyn.cap@nicklaushealth.org

Manning, Madeline C., M.A.²

madeline.manning@nicklaushealth.org

Naidoo, Reshma, Ph.D.¹

reshma.naidoo@nicklaushealth.org

¹Department of Psychology, Brain Institute

Nicklaus Children’s Hospital/La Salle University

3100 SW 62nd Ave

Miami, FL (786) 624-2382

²Department of Psychology, Brain Institute

Nicklaus Children’s Hospital/Northeastern University

3100 SW 62nd Ave

Miami, FL (786) 624-2393

**ABSTRACT**

**Objective:** Literature asserts that children with congenital heart disease are at higher-risk for autism spectrum disorder (ASD); however, researching exploring parallel COVID-19 social impacts in this population is scarce. Presented is a child with complex neurocardiac history and emerging concerns for ASD-related behaviors within the context of social isolation due to COVID-19 safety precautions.

**Methods:** Patient is a 9-year-old monolingual, Caucasian, male with history of tricuspid atresia, transposition of the great arteries, aortic stenosis, and interrupted aortic arch type A. Patient has undergone nine corrective surgeries to date. Patient is in 4th grade and struggling academically. Due to COVID-19 restrictions, he receives virtual asynchronous instruction at home. Patient has limited social contact with peers. Family history is notable for suspected ASD in older sister. Patient presented for outpatient neuropsychological evaluation, which included neurocognitive measures (e.g., WISC-V, DKEFS, Beery VMI, IVA-2) and parent questionnaires (e.g., BASC-3, MASC-2, Conners-3, ASRS). Behaviorally, patient presented with very limited eye contact. He demonstrated poor social reciprocity, was tangential and impulsive in conversation, and perseverated on topics of interest. Patient closely inspected visual inspect toys before engaging with them, and acted out movie scenes when engaging in pretend play.

**Results:** Testing revealed largely intact cognitive abilities (FSIQ = 98). Significant weaknesses were exhibited in executive functioning, attention, working memory, processing speed, and language pragmatics. Psychosocial questionnaires revealed elevated concerns for aggression, inattention, hyperactivity, and executive dysfunction. Surprisingly, no concerns were endorsed regarding ASD symptomology, starkly incongruent with behavioral observations.

**Conclusions:** This case highlights the importance of comprehensive developmental follow-up in patients with congenital heart disease particularly given social impacts of COVID-19. It will be imperative for clinicians to consider the ramifications of poor socialization, limited same-aged peer comparisons, and global psychosocial stressors when conceptualizing diagnostic impressions and providing targeted treatment recommendations for pediatric neurocardiac populations.
Theoretical/Commentary Abstract

Objective: Childhood-onset obsessive-compulsive disorder (CO-OCD) is one of the most debilitating pediatric mental health disorders, and yet its etiology, presentation, and diagnosis remain poorly understood (Cervin et al., 2021; Jaspers-Fayer et al., 2017). A growing body of research has increased understanding of neuroinflammatory and autoimmune links to CO-OCD and similar disorders, including pediatric acute-onset neuropsychiatric syndrome (PANS; Gagliano et al., 2020; Gerentes et al., 2019; Jaspers-Fayer et al., 2017; Wang et al., 2019). Recent research suggests that children presenting with PANS may be frequently misdiagnosed with CO-OCD (e.g., Gagliano et al., 2020). This presentation aims to call attention to the need for greater awareness of PANS and CO-OCD presentation and diagnosis among pediatric neuropsychologists and other care providers.

Discussion: The diagnosis of PANS remains challenging, due in part to the varying presentation of symptomatology and trajectory of disorder development (Sigra et al., 2018). Although longitudinal studies regarding prognosis remain sparse, Leon and colleagues (2018) found that multimodality treatments resulted in complete or near-complete remission in 88% of children. In their longitudinal research on children with PANS, Gromark and colleagues (2021) found that approximately 85% of children reported significant and substantial improvement on symptom presentation after long-term treatment. In stark contrast, even with treatment, most children diagnosed with CO-OCD maintain an OCD diagnosis in adulthood (Rough et al., 2020).

Conclusion: Many children who actually have PANS are misdiagnosed with CO-OCD (Johnson et al., 2021). Misdiagnosed children who are suffering from PANS may miss the opportunity for appropriate and effective treatment that, when delivered in a timely manner, could change the trajectory of their entire lives (Lotzin et al., 2021; Tang et al., 2021). It is therefore vitally important to provide in-depth education on PANS and CO-OCD to neuropsychologists and other care providers, especially in hospital settings.

References

Cervin, M., Perrin, S., Olsson, E., Claesdotter-Knutsson, E., & Lindvall, M. (2021). Involvement of fear, incompleteness, and disgust during symptoms of pediatric obsessive-compulsive disorder. European Child & Adolescent Psychiatry, 30(2), 271-281. https://doi.org/10.1007/s00787-020-01514-7

Gagliano, A., Galati, C., Ingrassia, M., Ciuffo, M., Alquino, M. A., Tanca, M. G., Carucci, S., Zuddas, A., & Grossi, E. (2020). Pediatric acute-onset neuropsychiatric syndrome: A data mining approach towards a very specific constellation of clinical variables. Journal of Child and Adolescent Psychopharmacology, 30(8), 495-511. https://doi.org/10.1089/cap.2019.0165

Gerentes, M., Pelissolo, A., Rajagopal, K., Tamouza, R., & Hamdani, N. (2019). Obsessive-compulsive disorder: Autoimmunity and neuroinflammation. Current Psychiatry Reports, 21(8), 1-10. https://doi.org/10.1007/s11920-019-1062-8

Gromark, C., Hesselmark, E., Djupedal, I. G., Silverberg, M., Home, A., Harris, R. A., Serlachius, E., & Mataix-Cols, D. (2021). A two-to-five year follow-up of a pediatric acute-onset neuropsychiatric syndrome cohort. Child Psychiatry and Human Development. https://doi.org/10.1007/s10578-021-01135-4

Jaspers-Fayer, F., Han, S. H. J., Chan, E., McKenney, K., Simpson, A., Boyle, A., Ellwyn, R., & Stewart, S. E. (2017). Prevalence of acute-onset subtypes in pediatric obsessive-compulsive disorder. Journal of Child and Adolescent Psychopharmacology, 27(4), 332-341. https://doi.org/10.1089/cap.2016.0031

Johnson, M., Ehlers, S., Fernell, E., Hajjari, P., Wartenberg, C., & Wallerstedt, S. M. (2021). Anti-inflammatory, antibacterial and immunomodulatory treatment in children with symptoms corresponding to the research condition PANS (pediatric acute-onset neuropsychiatric syndrome): A systematic review. PLoS One, 16(7), 1-15. https://doi.org/10.1371/journal.pone.0253844

Leon, J., Hommer, R., Grant, P., Farmer, C., ‘D’Souza, P., Kessler, R., Williams, K., Leckman, J. F., & Swedo, S. (2018). Longitudinal outcomes of children with pediatric autoimmune neuropsychiatric syndrome disorder associated with streptococcal infections (PANDAS). European Child & Adolescent Psychiatry, 27(5), 637-643. https://doi.org/10.1007/s00787-017-1077-9

Lotzin, A., Krause, L., Acquarini, E., Ajdukovic, D., Ardino, V., Amberg, F., Böttche, M., Bragesjö, M., Dragan, M., Figueiredo-Braga, M., Gelezyelyte, O., Grajewski, P., Anastassiou-Hadjicharalambous, X., Javakhishvili, J. D., Kazlauskas, E., Lenferink, L., Lioupi, C., Luenger-Schuster, B., Tsiskarishvili, L., Mooren, T., Sales, L., Stevanovic, A., Zmic, I., Schäfer, I., & ADJUST Study Consortium. (2021). Risk and protective factors, stressors, and symptoms of adjustment disorder during the COVID-19 pandemic - First results of the ESTSS COVID-19 pan-European ADJUST study. European Journal of Psychotraumatology, 12(1), 1-16. https://doi.org/10.1002/20008198.2021.1964197

Rough, H. E., Hama, B. S.,Gillett, C. B., Rosenberg, D. R., Gehring, W. J., Arnold, P. D., & Hanna, G. L. (2020). Screening for pediatric obsessive-compulsive disorder using the obsessive-compulsive inventory-child version. Child Psychiatry and Human Development, 51(6), 888-899. https://doi.org/10.1007/s10578-020-00966-x

Signa, S., Hesselmark, E., & Bejerot, S. (2018). Treatment of PANDAS and PANS: A systematic review. Neuroscience and Biobehavioral Reviews, 86, 51-65. https://doi.org/10.1016/j.neubiorev.2018.01.001

Tang, A. W., Appel, H. J., Bennett, S. C., Forsyth, L. H., Glasser, S. K., Jarka, M. A., Kory, P. D., Malik, A. N., Martinoffly, A. I., Wahlin, L. K., Williams, T. T., Woodin, N. A., Woodin, L. C., Miller, I. K. T., & Miller, L. G. (2021). Treatment barriers in PANS/PANDAS: Observations from eleven health care provider families. Families Systems & Health, 39(3), 477-487. https://doi.org/10.1037/fsf0000602

Wang, L.-Y., Chen, S.-F., Chiang, J.-H., Hsu, C.-Y., & Shen, Y.-C. (2019). Systemic autoimmune diseases are associated with an increased risk of obsessive-compulsive disorder: A nationwide population-based cohort study. Social Psychiatry and Psychiatric Epidemiology, 54, 507-516. https://doi.org/10.1007/s00127-018-1622-y

7

Title

Should Neuropsychologists Calculate GAI and CPI for Every Clinical Referral?

Authors

Peter Dodzik, Psy.D., ABN, ABPdN

pdodzik@nwbs.com

Philip Sarpong, M.S.

meganbeduze@nwbs.com

Sophie Osteen, B.S.

meghancahill22@gmail.com

Dalia Manjarres Cohen, Psy.D.

daliaamc@nwbhs.com

1Northwest Behavioral Health Services

Email: pdodzik@nwbs.com; meghancahill22@gmail.com; daliaamc@nwbhs.com

Address: 415 West Golf Road, Suite 16, Arlington Heights, IL 60005

Phone: (847) 577-0904

Fax: (847) 577-1558

2Adler University
Results: Consistent with previous literature, children with mental health diagnoses had significant differences between GAI and CPI, with ADHD accounting for the most (total sample=10.25 [SD=14.2]; ADHD=12.7 [SD=13.9]). Additionally, significant differences were found between FSIQ and GAI (total sample= 2.78 [SD=5.19]; ADHD=3.41 [SD=5.47]; LD=2.89 [SD=3.80]). ADHD and LD accounted for the greatest difference between indices. Given that children with higher IQs have larger variances between index scores, the frequency of significant GAI/CPI splits was calculated based on overall GAI range consistent with the technical manual. The total sample and the ADHD group had significant GAI/CPI splits at nearly three times the expected rates seen in normal children (total sample: $\chi^2 [1, N=296] = 20.38, p< 0.001$; ADHD: $\chi^2 [1, N=158] = 14.48, p<0.001$). Finally, significant differences between FSIQ and GAI were seen in children with mental health conditions; particularly, ADHD, LD, and ASD (ADHD: $\chi^2 [1, N=158] = 23.54, p< 0.001$; LD: $\chi^2 [1, N=46] = 6.13, p=0.013$; ASD: $\chi^2 [1, N=28] = 5.25, p=0.023$).

Conclusion: Significant differences in FSIQ/GAI and GAI/CPI are more commonly seen in children with mental health conditions; particularly, ADHD and LD. However, children with mood disorders without comorbid ADHD or LD did not show differences between FSIQ, GAI, and CPI.

ABSTRACT

Objectives: The goal of the present study was to determine the frequency of significant differences between FSIQ, GAI, and CPI in children with a variety of neuropathological conditions.

Methods: Archival analysis was performed on 420 subjects (146 female, 349 White) with a mean age of 11.59 (SD=5.4). The mean sample IQ was 105 (SD=15). Data was analyzed for six diagnostic categories: ADHD, Learning Disorders, Mood Disorders, ASD, Neurological Conditions, and Normative Controls. All subjects completed the WISC-V or WASI-IV, depending on age.

Results: Consistent with previous literature, children with mental health diagnoses had significant differences between GAI and CPI, with ADHD accounting for the most (total sample=10.25 [SD=14.2]; ADHD=12.7 [SD=13.9]). Additionally, significant differences were found between FSIQ and GAI (total sample= 2.78 [SD=5.19]; ADHD=3.41 [SD=5.47]; LD=2.89 [SD=3.80]). ADHD and LD accounted for the greatest difference between indices. Given that children with higher IQs have larger variances between index scores, the frequency of significant GAI/CPI splits was calculated based on overall GAI range consistent with the technical manual. The total sample and the ADHD group had significant GAI/CPI splits at nearly three times the expected rates seen in normal children (total sample: $\chi^2 [1, N=296] = 20.38, p< 0.001$; ADHD: $\chi^2 [1, N=158] = 14.48, p<0.001$). Finally, significant differences between FSIQ and GAI were seen in children with mental health conditions; particularly, ADHD, LD, and ASD (ADHD: $\chi^2 [1, N=158] = 23.54, p< 0.001$; LD: $\chi^2 [1, N=46] = 6.13, p=0.013$; ASD: $\chi^2 [1, N=28] = 5.25, p=0.023$).

Conclusion: Significant differences in FSIQ/GAI and GAI/CPI are more commonly seen in children with mental health conditions; particularly, ADHD and LD. However, children with mood disorders without comorbid ADHD or LD did not show differences between FSIQ, GAI, and CPI.

8

Title
Complex Case Study: Differentiating Co-Occurring Conditions with Autism Spectrum Disorder

Authors
Steven P. Greco, PhD, ABN1,2
sgreco@nrslifespan.com
Michelle Blose, Psy.D.2
mblose@nrslifespan.com
Gianna Scimensi
gianna336@gmail.com,
Monmouth University, NJ [3]
Meadow Allen3
madow@huntertech.com
Monmouth University, NJ [3]

1Department of Psychiatry and Neurology, Hackensack Meridian Health, Jersey Shore University Medical Center Campus, NJ
2Neuropsychology Rehabilitation Services|Lifespan, 4000 NJ-66 Suite 331, Tinton Falls, NJ
732-988-3441, Fax: 732-988-7123 [1,2]

3Monmouth University, West Long Branch, NJ

ABSTRACT

Objectives: The EEG connection between Autism and Seizure Disorders Objectives

Authors
Emma Grubbs, B.S.1
emma.grubbs@bsu.edu
Megan Slagel, M.A1
Andrew S. Davis, Ph.D.1
davis@bsu.edu

1Ball State University
2000 W. University Ave., Teachers College 505
Muncie, IN 47306
Office Phone: 765-285-8500

ABSTRACT

Objectives: Autism spectrum disorder (ASD) represents a risk factor for a number of comorbid neurological and psychiatric conditions including seizure disorders. Although electroencephalograms (EEG) research has been used for decades, the increasing prevalence of ASD suggests pediatric neuropsychologists should have a thorough understanding of the
connection between seizure disorders and ASD. This is particularly true for specific epilepsies such as West Syndrome, Lennox-Gastaut, and Infantile Spasms. This poster will examine the scant literature on this topic with a focus on EEGs of children with these disorders.

**Data Selection:** A literature review was conducted of journals on the following databases: PsycINFO, PsycARTICLES, ERIC, and Medline. A combination of the following terms was used: ‘autism,’ ‘asertic,’ or ‘Asperger,’ with ‘West Syndrome,’ or ‘Infantile Spasm,’ or ‘Lennox-Gastaut,’ with ‘EEG,’ or ‘electroencephalogram,’ or ‘electroencephalography,’ with ‘child,’ ‘adolescent,’ or ‘pediatric,’ or ‘youth,’ or ‘infant,’ or ‘toddler,’ with ‘not genetic,’ with ‘not enzyme,’ with ‘not tuberous sclerosis.’ A total of 41 articles were found, with only four related to the topic.

**Data Analysis:** The four relevant articles were reviewed and synthesized. Articles pertaining to genetics, treatment, or enzymes were excluded from the search. No book chapters were included in the analysis. All articles were peer reviewed.

**Conclusions:** Although children with ASD are more likely to have a seizure disorder than their neurotypical peers, there has not been a focus on the EEGs for these particular types of seizure disorders. Current research has found a link in abnormal EEGs for those with ASD and these type of seizure disorders. In comparison, there is extensive literature for seizure disorder than their neurotypical peers, there has not been a focus on early math ability in children. However, research indicates part-time employment has greater effects on math ability in children than full-time employment and employment in white-collar jobs has greater impact on early math ability. Ultimately, the research indicates that parental occupation tends to predict math ability and has greater predictive ability when school involvement remains high. Using demographic factors to predict premorbid cognitive functioning is common and the research findings on parental occupation and math will be discussed via implications for estimation of premorbid functioning.

11

**Title**

Limbic Dysmorphology in Children with Disruptive Behavior Disorders

**Authors**

Mary B. Hoffman
mary.hoffman@bsu.edu

Becca Stayton, Ed.S.
Andrew S. Davis, Ph.D.
davis@bsu.edu

1Ball State University
2000 W. University Ave., Teachers College 505
Muncie, IN 47306
Office Phone: 765-285-8500

**ABSTRACT**

Objectives: Disruptive behavior disorders (DBD) can, in part, be considered based upon the presence of callous-unemotional (CU) traits. Children with DBD and elevated CU-trait levels tend to display aggression, cruelty, and blunted emotional reactivity and have poor outcomes. The emotional processing of empathy may be related to limbic dysmorphology in children with DBD, which could help distinguish between types of disruptive behavior disorders. Understanding the pathology of CU traits may also have implications for the clinical treatment of DBD. This poster aims to analyze the scarce literature on this topic and examine the limbic differences between children with DBD with high and low CU traits as it relates to empathy.

**Data Selection:** A systematic search of journals was conducted using the following databases: PsycINFO, PsycARTICLES, ERIC, and Medline. The following search terms were employed: ‘conduct disorder,’ ‘disruptive behavior,’ ‘oppositional defiant disorder,’ with ‘callous unemotional traits,’ with ‘levels,’ or ‘subtypes,’ with ‘amygdala,’ ‘hippocampus’ or ‘limbic,’ with ‘child,’ ‘adolescent,’ ‘pediatric,’ ‘youth,’ ‘infant,’ ‘toddler,’ ‘children,’ or ‘teenager,’ with ‘empathy.’ Articles were included if they were published between 2017 and 2022 and peer reviewed journal articles. 11 articles were populated and retained based on relevancy.

**Data Analysis:** The 11 pertinent articles were reviewed and amalgamated. 5 of the populated articles were relevant to ‘disruptive behavior,’ with 4 specifically including ‘conduct disorder’ and/or ‘oppositional defiance disorder,’ 4 to ‘conduct problems,’ and 2 to ‘conduct disorder.’

**Conclusions:** High CU-trait behaviors are associated with reduced connectivity of the posterior cingulate cortex (PCC), left amygdala hypoactivation, and increased anterior cingulate cortex (ACC). The neural substrates of DBD related to limbic dysmorphology may represent avenues of assessment and intervention in treating children with high CU-trait levels. The implications will be discussed for researchers and practitioners.

12

**Title**

Neuropsychological Outcomes of a 15q26 Deletion Case Study

**Authors**

Emily M. Jimenez, M.Ed.
eml44@tamu.edu
ABSTRACT

Objective: 15q26 deletion is a rare genetic disorder with very few documented cases to date (Benbouchta et al., 2020). In these cases, this disorder has been associated with a wide variety of cognitive and medical outcomes depending on the amount of genetic material that was lost (O’Riordan et al., 2016). These include impaired growth both prenatally and postnatally, intellectual and developmental delay with varied severity, microcephaly, and congenital abnormalities (Benbouchta et al., 2020; O’Riordan et al., 2016). This case study aims to discuss the neuropsychological features and findings of one child with 15q26 deletion to aid in future treatment of children with this diagnosis.

Methods: Data were collected as part of a pediatric neuropsychological evaluation at a pediatric hospital. The assessment battery included intelligence, memory, motor, processing speed, and achievement measures.

Results: Data from this battery will be summarized to discuss the potential psychosocial, cognitive, and academic outcomes. We will also address needs for future research, and offer recommendations for best clinical practice when working with children who have 15q26 deletions.

Conclusions: Through the advancement of pediatric medicine, the role of neuropsychological treatment is becoming more integrated in standard care for children with complex and rare neurological diagnosis. This is particularly true when considering neurogenetic disorders and their often life-long treatment. Through better research surrounding these unique cases, the practice of neuropsychological treatment can see continued advancement.

References

Benbouchta, Yahya & Leeuw, Nicole & Amasdl, Saadia & Shiti, Aziza & Smeets, Dominique & Sadki, Khalid & Sefiani, Abdelaziz. 15q26 deletion in a patient with congenital heart defect, growth restriction and intellectual disability: case report and literature review. Italian Journal of Pediatrics. 47 (2021). 10.1186/s13052-021-01121-5. O’Riordan, A.M., McGrath, N., Sharif, F. et al. Expanding the clinical spectrum of chromosome 15q26 terminal deletions associated with IGF-1 resistance. Eur J Pediatr 176, 137–142 (2017). https://doi.org/10.1007/s00431-016-2802-y.
Objectives: Fetal alcohol spectrum disorders (FASDs) are a category of neurodevelopmental disorders caused by prenatal alcohol exposure (PAE). Children’s Research Triangle (CRT) is a non-profit organization that specializes in the needs of children with PAE, trauma, and mental health concerns. CRT uses a set of evidence-based diagnostic criteria developed from research to identify FASDs, which has evolved as new literature has become more focused and cohesive. This presentation will discuss CRT’s specific diagnostic criteria for FASDs and review the diagnostic processes used to facilitate differential diagnosis.

Discussion: Children with FASDs present with a variety of physical and neurocognitive differences that impair their functioning throughout the lifespan. FASDs are more common than acknowledged, and often missed during psychological and neuropsychological evaluations (May et al., 2018). Additionally, criteria used to diagnose FASDs vary across professions and settings. CRT understands FASDs as including physical and neuropsychological symptoms, with a unique pattern of dysmorphic facial features and growth delays characterizing fetal alcohol syndrome (FAS), and neurocognitive impairment accompanying both FAS and other PAE-related diagnoses. This neurocognitive impairment can include physical changes in the brain, in addition to impairment in intellectual development, attention, executive functioning, learning and memory, visual spatial skills, language, motor skills, sensory processing, social-emotional functioning, and/or adaptive skills (as shown on neuropsychological testing). Youths coming in for evaluations due to suspicion of an FASD have complex backgrounds, which may include a history of developmental and complex trauma, child welfare involvement, biological family history of serious and chronic mental health conditions, significant emotional and behavioral dysregulation, and comorbid diagnoses.

Conclusions: Given that FASDs have symptoms that overlap with other neurodevelopmental and psychiatric disorders, it is important that psychologists and neuropsychologists conduct comprehensive evaluations of these individuals that include medical and neuropsychological components to facilitate diagnostic sensitivity and specificity.
across domains—ethnic, socioeconomic status, age, abilities, clinical conditions, and gender. This poster will discuss implications for researchers and practitioners.

17
Title
Developmental screening in young children with and without ASD

Authors
Yanivis Machado-Gonzalez, MS.1
ymachado-gonzalez@email.fielding.edu
Joseph P. Bush, PhD.1
jbush@fielding.edu

1Fielding Graduate University
13700 SW 92nd Ave
Miami, FL 33176
Phone: 305-903-3220
Fax: 866-517-3411

ABSTRACT
Introduction: The American Academy of Pediatrics (AAP) recommends screening for all children as part of the regular well-check process (Lipkin et al., 2020). According to the Autism and Developmental Disabilities Monitoring (ADDM) network, more children are identified as having ASD than in previous surveillance years; however, findings indicate fewer than half of the children with autism had a developmental screening recorded by 36 months (as stated by Maenner et al., 2020), and the average age of diagnosis is four years and four months (Center for Disease Control and Prevention [CDC], 2019). Since 2016, universal screening practices were still not achieved. Pediatrician surveyed by the AAP found children were screened 23% of the time in 2002. By 2016, that number rose to 63%. Although the rates increased significantly, 37% of children missed the opportunity for early detection of a developmental deficit (Lipkin et al., 2020). The present study aims to add to the current literature by examining differences in developmental screening practices among children with and without autism in 2018 and 2019.

Objectives: To examine current developmental screening practices based on parental report and compare those practices across children with and without autism, while specifically considering gender and age of diagnosis.

Method: Archival data from the 2018 and 2019 National Survey of Children’s Health, a nationally representative, cross-sectional survey, was used to compare developmental screening practices of children who were ever told their child had autism (n = 221) and without (n = 14,763) autism. Analyses were limited to children aged 9 months to 5 years except when calculating the mean age of autism diagnosis, which included all children birth to 17 years (n = 1,576).

Results: Among children without autism, 37% received developmental screenings compared to 66% of children with autism, \( \chi^2(8) = 247, p < .001 \). Overall, males were more likely to be screened than females, \( \chi^2(4) = 18, p < .001 \). There was not a statistically significant association between gender and screenings for children with autism, \( \chi^2(4) = 6.93, p = .14 \); however, there was a statistically significant association for children without autism, \( \chi^2(4) = 17, p = .002 \). Participants with autism were diagnosed at a mean age of 5.17 years (M = 5.17, SD 3.30).

Conclusions: The present study revealed that 37% of children without autism and 66% of children with autism received a developmental questionnaire. When gender was considered for both children with and without autism combined, males were more likely to receive a questionnaire. When considering gender of children with autism alone, males were also more likely to receive a questionnaire. Although these results were statistically significant, they were not clinically meaningful due to small effect sizes.

Further, receiving an autism diagnosis occurred at the mean age of 5.17. Given that early intervention has repeatedly been identified as imperative to improving the quality of life for individuals with ASD, all pediatric providers have a duty to adhere to best practices for screening to decrease the age of autism diagnosis and improve the likelihood of early intervention.

References
Center for Disease Control and Prevention. (2019, August 27). Spotlight on: delay between first concern to accessing services. Center for disease control and prevention. Retrieved September 22, 2021, from https://www.cdc.gov/ncbddd/autism/addm-community-report/delay-to-accessing-services.html

Maenner, M. J., Shaw, K. A., Baio, J., Washington, A., Patrick, M., DiRienzo, M., Christensen, D. L., Wiggins, L. D., Pettygrove, S., Andrews, J. G., Lopez, M., Hudson, A., Baroud, T., Schwenk, Y., White, T., Rosenberg, C., Lee, L.-C., Harrington, R. A., Hston, M.,...Dietz, P. M. (2020). Prevalence of autism spectrum disorder among children aged 8 years — autism and developmental disabilities monitoring network, 11 sites, united states, 2016. MMWR. Surveillance Summaries, 69(4), 1–12. https://doi.org/10.15585/mmwr.ss6904a1

18
Title
Psychological Trauma Masquerading as Brain Injury Following COVID-19 Encephalitis

Authors
Manning, Madeline C., M.A.1
madeline.manning@nicklaushealth.org
Cap, Caitlyn J., M.A.2
caitlyn.cap@nicklaushealth.org
Korman, Brandon M., Psy.D., Ph.D., ABPP-CN1
brandon.korman@nicklaushealth.org

1Northeastern University/Nicklaus Children’s Hospital Brain Institute
3100 SW 62nd Avenue
Department of Psychology, Office 205
Miami FL
786-624-2382
2La Salle University/Nicklaus Children’s Hospital Brain Institute
Department of Psychology, Office 205
3100 SW 62nd Avenue
Miami, FL
786-624-2382

ABSTRACT
Objective: While COVID-19 predominantly impacts the respiratory system, neurological involvement may lead to diffuse encephalopathy. Rare cases of secondary encephalitis have been reported, often with residual cognitive deficits. Here we present neuropsychological functioning of a young patient with subjective cognitive complaints and behavioral
changes, yet relatively intact neuropsychological scores following COVID encephalitis.

**Participants/Methods:** Patient is an 11-year-old Hispanic female whose premorbid status was a medically healthy honor student. She was hospitalized due to COVID-19 with pneumonia and later re-admitted to ICU with altered mental status, abnormal EEG, elevated CSF protein and white cells, and encephalitis. She had residual memory complaints (repeatedly forgetting why she was hospitalized), odd social behavior, increased sleep, and intermittently acting like an infant. Her neurologist consulted us one-year after initial illness due to ongoing concerns. Comprehensive neuropsychological evaluation included WISC-V, CVLT-C, RFFT, WRAT-V, Beery Buktenica, Grooved Pegboard, and socioemotional questionnaires.

**Results:** Despite significant functional difficulties, testing revealed largely intact cognitive skills, except for weak word generation and elevated anxiety. She demonstrated low average intellectual skills, with intact verbal retention across a modest time span. Strong reasoning abilities, working memory, and processing speed were inconsistent with a brain injury; by contrast, crystallized intelligence, which tends to be resilient to injury, was considerably weaker and thus discordant with her academic history. Neuropsychological profile analysis, and the pattern and timing of behavioral changes, offers significant evidence that her presentation stems largely from psychological trauma triggered by acute medical complications.

**Conclusions:** This case highlights the importance of examining both functional and structural considerations, regardless of the presumptive etiology. Without understanding the true nature of their underlying problem, a child may not receive the appropriate remedial treatment. While most brain-injured patients are likely to suffer some loss of neurological integrity, many have additional psychological injuries that must be carefully assessed.

---

**19**

**Title**
NEPSY Affect Recognition Performance Among Children with Neurodevelopmental Disorders

**Authors**
Grace Mucci, Ph.D., M.S., ABPdN1
Tess Nguyen2
tlnguyen0128@gmail.com
Kaela Evans3
kaelabruin23@ucla.edu
Anna Zandueta4
aczandueta@gmail.com
Elizabeth Pearce3
eillepearce01@gmail.com
Elika Parab4
eparab@uci.edu
Caroline Candy5
carolinegracecandy@gmail.com
Laura Coopersmith, Ph.D.1
laura.coopersmith@gmail.com
Yada Treesukosol, Ph.D.2
Yada.Treesukosol@csulb.edu

1Neuropsychology Services
5855 E. Naples Plaza, Suite 203, Long Beach, CA 90803
Phone: (949) 478-4503
Fax: (562) 856-6004

2California State University, Long Beach
1250 Bellflower Blvd., Long Beach, California 90840
Phone: (562)-985-4111

---

**20**

**Title**
Sex Based Autism Patterns in Hybrid Telehealth Approach to Assessment

**Authors**
Chantel Osman, Psy.D.1
cosman@axisforautism.com
Morgan Hall, Ph.D.3
mhall@axisforautism.com
Marleigh Bowers, B.S.3
mbowers@axisforautism.com
Amanda Salman, B.S.2
amanda.salman@midwestern.edu

1Axis for Autism
1645 E. Missouri Avenue Suite 320
Phoenix, AZ 85016
sex and diagnostic outcome, statistical analysis showed there was no significant association between versus 12 males and 5 females not diagnosed. Results of the chi-square Overall, 69 males and 33 females were diagnosed with ASD more than females.

 Results: Overal, 69 males and 33 females were diagnosed with ASD versus 12 males and 5 females not diagnosed. Results of the chi-square statistical analysis showed there was no significant association between sex and diagnostic outcomes (ASD diagnosis or no ASD diagnosis). The sample had 119 patients ages 3–21 years (68.1% male; 31.9% female) from a private clinic. Overall, 66 patients were referred by a professional and 53 self-referred. We hypothesized there would be a difference in rate of diagnosis between sexes, with males being diagnosed more than females.

 Conclusions: While sex differences were present in rates of referral, results indicate females were as likely to be diagnosed with ASD as males (i.e., sex had no relationship with the diagnostic outcome of referred clients). A hybrid model may aid in reducing bias as this approach is data-driven and relies less on clinician intuition. A hybrid model using a team approach allows for input from multiple providers. In future research, it may be useful to parse out sex disparities in diagnostic outcomes related to screening methods and referral rates as opposed to clinician expertise.

 References
Loomes, R., Hull, L., & Mandy, W. (2017). What Is the Male-to-Female Ratio in Autism Spectrum Disorder? A Systematic Review and Meta-Analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, 56(6), 466–474. https://doi.org/10.1016/j.jaac.2017.03.013
Tsirgiotis, J.M., Young, R.L. & Weber, N. A Mixed-Methods Investigation of Diagnostician Sex/Gender-Bias and Challenges in Assessing Females for Autism Spectrum Disorder. *J Autism Neurodev Disord*
ABSTRACT

Research has highlighted delays in identification of minoritized children for speech-language services compared to their white counterparts. The present study explores associations between race/ethnicity, retention, and the diagnosis of language disorder (LD) in school-aged children and adolescents from low-income, ethnically diverse backgrounds. The retrospective study collected demographic and post-diagnostic information from the charts of 355 students who received a neuropsychological evaluation at an urban outpatient clinic between 2015 and 2020. Participants (males=228; Mage=10.45, SD=3.35) were referred due to consistently poor school performance concerns. Of 355 charts reviewed, 156 included participants’ race/ethnicity (3.8% white, 51.3% Hispanic/Latinx, 5.8% Asian, 28.2% Black, 10.9% multiracial/multiethnic). As a result of a neuropsychological evaluation, 87.8% of children were provided different diagnoses than upon entry. Analyses revealed a relationship between ethnicity and the diagnosis of LD as principal challenge \( \chi^2(1,151)=4.029, p<.05 \); higher percentages of Black (33.3%), Hispanic/Latinx (32.1%), and Asian (22.2%) children were retained than white (0.0%) and multiracial/multiethnic (0.0%) counterparts. When comparing retention rates and LD \( \chi^2(4,151)=11.391, p<.01 \), it was observed that 48.8% of retained children were provided an LD diagnosis as a primary concern in contrast to 20.9% of promoted children. Cross-tabulation of the relationship between retention, race/ethnicity, and LD as primary diagnosis was significant for the Hispanic/Latinx \( \chi^2(1,151)=4.029, p<.05 \) and Asian \( \chi^2(1,151)=3.938, p<.05 \) samples; no significance was noted for the Black sample. Prior research has elucidated negative impacts of grade retention and poor identification rates of SLI, notably in Hispanic/Latinx populations. Our results contribute to literature regarding the complex interplay between retention, race/ethnicity, and occurrence of LD, suggesting need for improved screening practices, evaluation of referral bias, and evidence-based interventions for language-based weaknesses generally, and particularly for Hispanic/Latinx communities.

24

Title

A Neuropsychological Perspective of the Education Disruptions Due to COVID-19

Authors

Elizabeth M. Stuart, M.A.1
estuart1@alliant.edu

Brian Gutierrez, M.S., M.A., BCBA2
bgutierrez1@alliant.edu

Samantha Torres, M.A.2
storres2@alliant.edu

1Alliant International University
306 E. 12th St. #312
Kansas City, Missouri, 64106
Phone: 515-691-2097
Fax: 913-682-4664

2Alliant International University
1000 S. Fremont Ave. #5,
Alhambra, California, 91803
Phone: 323-238-5613
Fax: 913-682-4664
ABSTRACT
Education and pediatric neuropsychology have consistently had a unique relationship. Neurocognitive development, to some degree, has been linked to a child’s ability to access education and have educational supports that appropriately meet their needs (Greenberg, et al., 2004; Noble, et al., 2005). This field also has a longstanding history in providing academic recommendations and intervention to improve a child’s overall neurocognitive development and functioning (Hartlage & Telzrow, 1983; Witsken, et al., 2008). Certain teaching styles have even been historically contrived and prescribed in order to better serve the needs of the student (Crane, 1989). More recent guidance has continued to use neuropsychology and childhood brain research as a way to shape education (Bergen & Woodin, 2017). It is important to note that due to the novel coronavirus pandemic (COVID-19), all educational systems were impacted to some degree (Mseleku, 2020). There has been a highly disparate response to COVID-19 in different areas, with responses ranging from continued remote learning to other schools returning to entirely in-person learning without mask restrictions (Margolius, et al., 2020). Taken together, it is very likely that a child’s learning without mask restrictions (Margolius, et al., 2020). Taken together, it is very likely that a child’s cognitive development has been impacted by the major shift in academic support caused by COVID-19.

In this literature review, the authors will explore the historical context of neuropsychology’s role in the classroom and academic involvement, the impact of COVID-19 on education, learning styles, and classroom intervention, as well as the potential outcome on the child’s overall neurocognitive development. The authors will then delineate the clinical implications for pediatric neuropsychology, especially highlighting the recommendations which can be provided to improve a child’s learning ability and to assess a child’s neurocognitive ability more appropriately in the era of telehealth. Finally, the authors will present research implications including the development of greater e-learning and e-teaching supports for children, teachers, and families.

References
Bergen, D., & Woodin, M. (2017). Brain research and childhood education: Implications for educators, parents, and society. Routledge.
Crane, T. J. (1989). A Neuropsychological Consultation Model Designed To Foster Wholebrain and Cognitive Style-Responsive Instruction for “At Risk” Elementary School Students.
Greenberg, M. T., Kusché, C. A., & Riggs, N. (2004). The PATHS curriculum: Theory and research on neurocognitive development and school success. Building academic success on social and emotional learning: What does the research say? 170-188.
Hartlage, L. C., & Telzrow, C. F. (1983). The neuropsychological basis of educational intervention. Journal of Learning Disabilities, 16(9), 521-528.
Mseleku, Z. (2020). A literature review of E-learning and E-teaching in the era of Covid-19 pandemic. SAGE, 57(9), 588-597.
Noble, K. G., Tottenham, N., & Casey, B. J. (2005). Neuroscience perspectives on disparities in school readiness and cognitive achievement. The Future of Children, 71-89.
Witsken, D., Stoeckel, A., & D’Amato, R. C. (2008). Leading educational change using a neuropsychological Response-to-intervention approach: Linking our past, present, and future. Psychology in the Schools, 45(9), 781-798.

25
Title
Pediatric neuropsychology and the indigenous American people

Authors
Katie A. Welch, B.A.1
katie.welch@bsu.edu
Jerrell C. Cassady, Ph.D1
Andrew S. Davis, Ph.D.1
davis@bsu.edu

1Ball State University
2000 W. University Ave., Teachers College 505
Muncie, IN 47306
Office Phone: 765-285-8500

ABSTRACT
Objectives: A wealth of research has demonstrated that culture accounts for a significant part of the variance in neurocognitive tests scores. Additionally, understanding a patient’s culture is essential to determining whether or not they meet the diagnostic criteria for psychiatric disorders. As such, the lack of research for indigenous American people, especially indigenous American children, in the pediatric neuropsychological literature is a concern. The purpose of this literature review and poster is to review the current literature on the development of intersectional cross-cultural partnership between the field of pediatric neuropsychology and the indigenous American people.

Data Selection: Literature was collected through searches of academic journals through PsychInfo, PsycArticles, Medline, and ERIC. Search terms used in data selection included ‘indigenous American’, or ‘indigenous people’, or ‘native American’, or ‘American Indian’, with ‘neuropsychology’, or ‘neuropsychological assessment’, with ‘adolescent’, or ‘child’, or ‘children’, or ‘infant’, or ‘pediatric’, or ‘teenager’, or ‘youth’. A total of 48 articles fit the search term criteria. After filtering out unrelated research, 13 articles remained.

Data Analysis: The 13 remaining articles were analyzed and synthesized. These 13 articles cover topics ranging from addressing the lack of neuro-psychology research pertaining to the indigenous American population, the need to address health disparities in indigenous American communities, intergenerational trauma, cultural variables, historical disenfranchised grief, and historical unresolved trauma through cultural genocide.

Conclusions: Despite the many conversations about cultural humility and past failures to challenge racism happening in the psychology community today, there is insufficient literature in the field of pediatric neuropsychology about working with indigenous American children. The present literature review did not yield any factorial invariance studies on any measures commonly used in pediatric neuropsychology. It is important to consider that indigenous Americans are not a homogenous group. Implications for researchers and practitioners will be discussed.

26
Title
Rater Agreement of Early Autism Concerns in High-Risk Infants

Authors
Ileana Y. Umana, MA1
Email: ileana.umana@tamu.edu
Emily M. Jimenez, M.Ed.1
Email: eml44@tamu.edu
Dr. Andrew Martinez, PhD2
Email: Andrew.martinezjr@bcm.edu
Dr. Melissa Svoboda2
Email: Melissa.svoboda@bcm.edu

1Texas A&M University
400 Bizzell St
College Station, TX 77843
Office #: 932) 303-9851

2Baylor College of Medicine
315 N. San Saba, Ste 1135
San Antonio, TX 78207
Office #: 210-704-8865
Office fax#: 210-704-0059

ABSTRACT
Objectives: A wealth of research has demonstrated that culture accounts for a significant part of the variance in neurocognitive tests scores. Additionally, understanding a patient’s culture is essential to determining whether or not they meet the diagnostic criteria for psychiatric disorders. As such, the lack of research for indigenous American people, especially indigenous American children, in the pediatric neuropsychological literature is a concern. The purpose of this literature review and poster is to review the current literature on the development of intersectional cross-cultural partnership between the field of pediatric neuropsychology and the indigenous American people.

Data Selection: Literature was collected through searches of academic journals through PsychInfo, PsycArticles, Medline, and ERIC. Search terms used in data selection included ‘indigenous American’, or ‘indigenous people’, or ‘native American’, or ‘American Indian’, with ‘neuropsychology’, or ‘neuropsychological assessment’, with ‘adolescent’, or ‘child’, or ‘children’, or ‘infant’, or ‘pediatric’, or ‘teenager’, or ‘youth’. A total of 48 articles fit the search term criteria. After filtering out unrelated research, 13 articles remained.

Data Analysis: The 13 remaining articles were analyzed and synthesized. These 13 articles cover topics ranging from addressing the lack of neuro-psychology research pertaining to the indigenous American population, the need to address health disparities in indigenous American communities, intergenerational trauma, cultural variables, historical disenfranchised grief, and historical unresolved trauma through cultural genocide.

Conclusions: Despite the many conversations about cultural humility and past failures to challenge racism happening in the psychology community today, there is insufficient literature in the field of pediatric neuropsychology about working with indigenous American children. The present literature review did not yield any factorial invariance studies on any measures commonly used in pediatric neuropsychology. It is important to consider that indigenous Americans are not a homogenous group. Implications for researchers and practitioners will be discussed.

26
Title
Rater Agreement of Early Autism Concerns in High-Risk Infants

Authors
Ileana Y. Umana, MA1
Email: ileana.umana@tamu.edu
Emily M. Jimenez, M.Ed.1
Email: eml44@tamu.edu
Dr. Andrew Martinez, PhD2
Email: Andrew.martinezjr@bcm.edu
Dr. Melissa Svoboda2
Email: Melissa.svoboda@bcm.edu

1Texas A&M University
400 Bizzell St
College Station, TX 77843
Office #: 932) 303-9851

2Baylor College of Medicine
315 N. San Saba, Ste 1135
San Antonio, TX 78207
Office #: 210-704-8865
Office fax#: 210-704-0059
ABSTRACT

Objective: Parent reports of behavioral concerns have been found to be more informative than clinician ratings (Sacrey et al., 2018). Informant differences may influence the identification of autism spectrum disorder (ASD; Ward et al., 2018). Ward et al. (2018) noted that clinicians are typically more reliable in reporting symptomology within the social communication, while parents more accurately report behavioral data. Therefore it is important to understand the relationship between clinician and parental report in order to accurately integrate data in ASD evaluations. This poster compares parent and clinician ratings of behaviors related to autism spectrum disorder (ASD) in a group of infants at high risk for ASD.

Method: This study examines pre-test data from a University/Pediatric Hospital collaborative program aimed at identifying infants and toddlers at high risk for developing autism spectrum disorder (ASD). Participants were accepted for participation if they have a sibling diagnosed with ASD or if their parent/pediatrician noted developmental concerns. Sixteen infants (mean age: 11.25 months, n = 5 females) participated. Clinicians completed the Autism Observation Scale for Infants (AOSI) and Mullen Scales of Early Learning, while parents completed the Autism Parent Screen for Infants (APSI), Developmental Profile-3 (DP-3), and Vineland.

Results: Data from clinician-completed AOSI and Mullen were compared to parent-completed APSI, DP-3, and Vineland-3. Total scores and scales were compared based on the rater.

Conclusion: The use of multiple informants is needed for gold-standard assessments. It is important to understand the relationship between raters and how that relates to the overall results of the assessment.

References
Sacrey, L. A. R., Zwaigenbaum, L., Bryson, S., Brian, J., Smith, I. M., Roberts, W., ... & Garon, N. (2018). Parent and clinician agreement regarding early behavioral signs in 12-and 18-month-old infants at-risk of autism spectrum disorder. Autism Research, 11(3), 539-547.
Ward, S. L., Sullivan, K. A., & Gilmore, L. (2018). Combining parent and clinician ratings of behavioural indicators of autism spectrum disorder improves diagnostic classification. Early Child Development and Care, 188(6), 748-758.

27

Title
Early Neuroimaging Findings in Pediatric COVID-19

Authors
Qianhan Xiong, M.S.1
qxiong@bsu.edu
Andrew S. Davis, Ph.D.1
davis@bsu.edu
1Ball State University
2000 W. University Ave., Teachers College 505
Muncie, IN 47306
Office Phone: 765-285-8500

ABSTRACT

Objectives: Coronavirus disease 2019 (COVID-19), caused by the SARS-CoV-2, is primarily associated with pulmonary symptoms. Neurological abnormalities have also been reported in approximately 36% of all COVID-19 patients. The cellular receptor angiotensin-converting enzyme 2 (ACE2) is required for SARS-CoV-2 to enter human cells, and a high concentration of this is found in the brainstem, thalamus, middle temporal gyrus, motor cortex, circumventricular organs, olfactory bulb, and posterior cingulate cortex. This finding suggests SARS-CoV-2 can readily enter cells of these regions, but this assumption needs to be supported by more data. While there are a growing number of studies investigating the neurological manifestations of COVID-19 in adults, relevant pediatric research is still scarce. This poster aims to review early findings of neurological abnormalities associated with COVID-19 in children.

Data Selection: Literature was obtained by searching of journals in the following databases: PsycARTICLES, PsycINFO, ERIC, and Medline. The following search terms were used in combinations: ‘child’, ‘adolescent’, ‘youth’, ‘pediatrics,’ ‘infant’, or ‘toddler,’ with ‘covid-19’, ‘coronavirus’, or ‘covid-19 and multisystem inflammatory syndrome in children,’ with ‘MRI,’ ‘fMRI,’ ‘SPECT,’ ‘PET,’ ‘DTI,’ ‘EEG,’ or ‘neuroimaging.’ A total of 271 articles were found, and 17 of them were related to neurological manifestations of pediatric COVID-19.

Data Analysis: The 17 relevant articles were evaluated and synthesized. Neuroimaging findings related to pediatric COVID-19 or COVID-19-associated multisystem inflammatory syndrome in children (MIS-C) were extracted.

Conclusions: Pediatric COVID-19 has been associated with acute disseminated encephalomyelitis (ADEM)—like changes, white matter hyperintensities, hypometabolism in cerebellum, brainstem, and temporal regions, and restricted diffusion in brain. In children with COVID-19-associated MIS-C, splenial lesions in corpus callosum, encephalopathy with reversible splenial lesion (MERS), and posterior reversible encephalopathy syndrome (PRES) were reported. As most of the findings were drawn from case studies, large sample and longitudinal research is needed in the pediatric COVID-19 research.
or ‘math’, or ‘writing’, or academic’, or ‘neuropsychological’, or ‘neuropsychology’. A total of 47 articles were identified and only 14 were somewhat relevant to pediatric neuropsychology and cerebellar pediatric pilocytic astrocytoma.

**Data Analysis:** The 14 relevant articles were reviewed and synthesized.

**Conclusions:** Despite the relatively common occurrence of cerebellar research on Pediatric Pilocytic Astrocytoma, the field of neuropsychology does not have a definitive conclusion for cognitive functioning outcomes of PA survivors. For instance, outcomes range from prolonged impairment to complete recovery of cognitive impairments. While using less restricted search terms can extend the understanding of pediatric pilocytic astrocytoma for the field of pediatric neuropsychology, more focus is needed on cognitive impairment outcomes from various treatments.

**Publisher’s Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.