AACAP Summer Medical Student Fellowship in Child and Adolescent Psychiatry, supported by AACAP’s Endowment Fund

The AACAP Summer Medical Student Fellowships, supported by AACAP’s Endowment Fund, offer an opportunity for medical students to explore a career in child and adolescent psychiatry, gain valuable work experience, and meet leaders in the field of child and adolescent psychiatry. The fellowship opportunity provides up to $3,500 for 12 weeks of clinical or research training under a child and adolescent psychiatrist mentor. The fellowships are administered through AACAP’s Department of Research, Grants, and Workforce, AACAP’s Training and Education Committee, under the direction of Sansea Jacobson, MD, and A. Lee Lewis, MD, along with AACAP’s Committee on Medical Students and Residents, under the direction of George "Bud" Vana, MD, MS, and Sheetal Zalpuri, MD.

Sarah B. Abdallah, BS
Yale School of Medicine
Project: Genetic Contribution of Copy-Number Variation to OCD
Mentor: Thomas V. Fernandez, MD

Kara Benson, BA
University of Massachusetts
Project: Educational Navigation for Youth in Foster Care: A Summer Pilot Aimed at Building Pathways for Educational Success and Mental Health Resiliency within an Integrated Care Clinic
Mentor: Wynne Morgan, MD

Samuel J. Eggers, BS
Tulane University
Project: Screening for Social Determinants of Health in Early Childhood Mental Health Consultation
Mentor: Mary Margaret Gleason, MD

Ariana G. Rosario Fusté, BS
Central University of the Caribbean
Project: Internet Gaming Disorder Prevalence in the Hispanic Adolescent Community
Mentor: Ohel Soto Raíces, MD
Ms. Rosario Fusté’s award was partially funded by the Ruth and Peter Metz Family Foundation.
Catherine A. Ha, BS
University of California, Riverside
Project: Barriers and Facilitators Affecting Mental Health Service Utilization Among Asian American and Pacific Islander Youths in Riverside County
Mentor: Richard J. Lee, MD

Edwin J. Klein, BS
University of Michigan
Project: Simplifying Somatization: Reducing Healthcare Utilization With a Clinical Practice Guideline for Pediatric Somatic Symptom and Related Disorders
Mentors: Nasuh Malas, MD, MPH, and Kris Kuligren, PhD

Sarah M. Laudon, BS
Rosalind Franklin University of Science and Medicine
Project: Analyses of the BLOC and BLAS Rating Scales and Their Impact on Adolescents Age 11–17 Diagnosed With Obsessive-Compulsive Disorder and/or Anxiety Disorder
Mentor: Lin Lu, MD, PhD

Andrew D. Rylaarsdam, BS
Midwestern University
Project: Factors Associated With Treatment Participation in Children’s Mental Health
Mentors: Kelley A. Volpe, MD, Liza M. Suarez, PhD, and Lauren E. Cox, LCSW (University of Illinois at Chicago, Institute for Juvenile Research)

Marc A. Skiles, BS
University of Wisconsin
Project: Modeling Grey Matter Changes During Typical Childhood Development
Mentors: Ryan Herrinka, MD, PhD, and Justin Russell, PhD
Anne K. Tulisiak, BS  
Wright State University  
Project: *CYP2C19 Metabolizer Status Predicts Escitalopram Pharmacokinetics in Adolescents With Generalized Anxiety Disorder*  
Mentor: Jeffrey R. Strawn, MD (University of Cincinnati)

Christopher G. Viamontes, MA  
University of Illinois at Chicago  
Project: *Maternal 15q11-q13 Duplication Syndrome With ASD: Mood Stabilization by Carbamazepine*  
Mentor: Edwin H. Cook, MD  
Mr. Viamonte’s award was partially funded by the Ruth and Peter Metz Family Foundation.

Margaret Y. Yau, MS, BS  
University of California, Riverside  
Project: *Mental Health Service Needs, Utilization, and Associated Factors in Diverse Child Welfare Population*  
Mentors: Takesha Cooper, MD, MS, and Carl Feinstein, MD
Genetic Contribution of Copy-Number Variation to Obsessive-Compulsive Disorder

Sarah B. Abdallah1*, Emily Olfson2,3, Thomas V. Fernandez2,3
1Yale University School of Medicine, 2Yale Child Study Center, 3Yale Department of Psychiatry

BACKGROUND
- OCD is an often-disabling developmental neuropsychiatric disorder with a lifetime prevalence of 1.5-2.5%.
- Ranked among the 10 most debilitating disorders of any kind by WHO.
- Treatment-refractory disease is common.
- Causes of OCD are poorly understood, limiting therapeutic advances.
- Strong evidence for a genetic contribution, but finding high-confidence risk genes has been challenging.
- Germline de novo single-nucleotide variants (SNVs) and indels have pointed to OCD risk genes.
- Other types of genetic variation, including rare copy-number variants (CNVs), are implicated in autism and related disorders.
- The role of small-to-medium (<500 kilobase) CNVs has not yet been fully explored in OCD.

METHODS
- OCD Sequencing Consortium
  - 222 affected OCD trios
    - Nimblegen EZExome v2 or MedExome capture library, Illumina HiSeq 2000
- Simons Simplex Collection
  - 855 unaffected control trios
    - Nimblegen EZExome v2 capture library, Illumina HiSeq 2000

RESULTS

<table>
<thead>
<tr>
<th></th>
<th>OCD (182 families)</th>
<th>Control (777 families)</th>
<th>Rate ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td># rare CNVs</td>
<td>369</td>
<td>609</td>
<td>2.59</td>
<td>&lt; 2.2E-16</td>
</tr>
<tr>
<td>Sum of lengths (Mb)</td>
<td>13.8</td>
<td>24.3</td>
<td>2.42</td>
<td>&lt; 2.2E-16</td>
</tr>
<tr>
<td># samples with CNVs</td>
<td>123</td>
<td>426</td>
<td>1.23</td>
<td>0.050</td>
</tr>
</tbody>
</table>

Table 1. Rare CNVs are enriched in OCD compared to unaffected controls. Two outlier OCD trios with excess CNVs were removed.

<table>
<thead>
<tr>
<th>KEGG pathway name</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein digestion and absorption</td>
<td>2.1E-04</td>
</tr>
<tr>
<td>Cytochrome P450 – drug metabolism</td>
<td>1.7E-03</td>
</tr>
<tr>
<td>Cytochrome P450 – xenobiotic metabolism</td>
<td>2.0E-03</td>
</tr>
</tbody>
</table>

Table 2. Pathway analysis of 60 genes overlapping de novo OCD CNVs.

<table>
<thead>
<tr>
<th>Spatiotemporal region</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortex early fetal</td>
<td>0.001</td>
</tr>
<tr>
<td>Cerebellum early fetal</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Figure 1. Expression analysis of genes overlapping de novo OCD CNVs.

DISCUSSION
- Putative rare CNVs are enriched in OCD patients compared to controls, suggesting they may play a role in OCD pathogenesis.
- Genes overlapping de novo CNVs identified in OCD patients have enriched expression in early fetal cortex and cerebellum.
- Genes containing rare CNVs may provide future avenues of exploration for studies of OCD pathophysiology.

We identified rare genetic copy-number variants in whole-exome sequencing data from patients with obsessive-compulsive disorder.

These variants significantly overlap genes expressed in early fetal cortex and cerebellum.
University of Massachusetts Medical School

Educational Navigation for Youth in Foster Care: A Summer Pilot Aimed at Building Pathways for Educational Success and Mental Health Resiliency Within an Integrated Care Clinic

Kara Banson1, MS2, Timothy Winn2, MS2, Wynne Morgan2, MD, and Heather Forkey3, MD
University of Massachusetts Medical School

Introduction

- Foster Children Evaluation Service (FaCES) Clinic is the first healthcare checkpoint for children entering foster care
- Gap: Youth seen at FaCES struggle in school, especially those with more significant mental health needs
- Children involved with child welfare often have poor school outcomes:
  - low math and reading achievement scores
  - high likelihood of repeating a grade
  - lower high school graduation rates
- School can be a stabilizing resource for children in foster care and can serve as a potential place for healing
- Approach: FaCES challenges the traditional medical model as it seeks to address the educational needs of its patients by introducing the role of an Education Navigator (EN)

Objectives

1) Understand how FaCES operates as a medical evaluation program to address the physical, mental, and educational health needs for foster youth
2) Define the role and pathway for how the EN can obtain information from the school and report medical and mental health information back to the school
3) Develop a resource roadmap that would navigate the EN, patients, and foster parents to school and community-based educational resources

Methods

- Tracked 5 FaCES patients with significant mental health needs and identified academic needs and use of resources
- A preliminary analysis of the program’s communication logs was done to determine how the program’s outreach efforts compared to the collateral information obtained from the source
- Meetings with members of the FaCES Clinic, community organizations, and school representatives were held to spread awareness and form partnerships

Results

1. Created a FaCES Clinic website that serves as a resource center for foster parents and families, as well as clinicians

Developed handouts for foster parents and caregivers on the following topics:
- What are my signing rights and responsibilities?
- What is the best intervention or collaboration?
- What is the difference between an IEP/504?
- How do I initiate a special education evaluation?
- How do I prepare for a team meeting?

2. Defined a 3-tier system of service intensity that will be provided by the education navigator

High
- Child accesses MH services
- Interplay between school and MH needs
- EN’s Tasks
- Supports caregiver when there are multiple concerns (e.g., request for an education guardian ad litem)
- Connects child and caregiver to specialized community resources like Court Appointed Special Advocates and Community Legal Aid

Medium
- Child accesses MH services
- Interplay between school and MH needs
- EN’s Tasks
- Facilitates transfer of information between MH clinic and schools
- Supports caregiver with making initial request for special education evaluation
- Refer to developing an existing plan

Low
- Child does not need MH services
- EN’s Tasks
- Supports caregiver

Conclusions

The child-serving system of care often creates silos, making collaboration and communication difficult. The creation of the EN position can help link families, the local educational system, and the FaCES Clinic. This link allows the academic needs of a high-risk population to be better addressed in collaboration with an integrated care setting, ultimately promoting better outcomes and resiliency.

What’s Next?

The Clinic is partnering with local organizations and policymakers to help improve the academic outcomes for kids in foster care. The Clinic plans to continue developing our resource toolbox by including new podcast and video content that are practical and easily accessible for foster families, clinicians, and teachers.

Acknowledgements

I am grateful for the opportunity to work with the FaCES team. The team’s dedication and enthusiasm toward their mission and patients are admirable. Many thanks to my mentors, Dr. Morgan and Dr. Forkey, who have enriched my understanding of what it means to be a physician. I am thankful to AACAP’s Endowment Fund, which supported my work as an AACAP Summer Medical Student Fellow.

Literature Cited

Screening for Social Determinants of Health in Early Childhood Mental Health Consultation

Samuel John Eggers BS & Mary Margaret Gleason MD FAPP
Departments of Psychiatry and Behavioral Sciences and of Pediatrics, Tulane University School of Medicine, New Orleans, Louisiana
www.LA-TECC.org tecz@tulane.edu @Tulane_TECC

Background

The American Academy of Pediatrics recommends psychosocial evaluation beginning in infancy as a part of its 24-month well-child visits (AAP, 2015). This psychosocial evaluation includes screening for adverse social determinants of health (ASDH). In adverse forms, ASDH can cause toxic stress, which can damage children’s health and affect a variety of physiologic systems (Rochette et al., 2012). Children exposed to ASDH are at increased risk for mental health issues across their lifespan (Shonkoff et al., 2012). Identifying ASDH is part of an early childhood development (ECD) model of care, which includes attention to children’s social, physical, and environmental factors because of the powerful physical and mental health impacts of the caregiving environment. The AAP also explicitly recommends screening for emotional and behavioral concerns to promote early detection and intervention in childhood mental health (Wellsman et al., 2015). Through screening in pediatric primary care practices, clinicians can identify families with unmet needs, and address those needs through referrals and in-service counseling.

The Safe Environment for Every Kid (SEEK) is one of the AAP-recommended screens for risk factors in the caregiving environment. The SEEK is a validated screen that identifies children exposed to ASDH including caregiver mental health, exposure to violence, and lack of basic needs. It is associated with improvements in pediatric care, including reduced emergency room visits, maternal depression, and improved adherence (Dubovsky et al., 2009).

Screening is one element of Tulane Early Childhood Collaborative (TEC), an early childhood mental health consultation service for pediatric primary care providers in New Orleans, Louisiana. TEC promotes screening for coping environmental risks as well as child and caregiver symptoms and provides consultation with and without the parent present. TEC aims to increase identification and management of unmet needs in participating pediatric primary care clinics by increasing the capacity of pediatric primary care providers to screen and address concerns.

Methods

**Overview**

TEC provides early childhood mental health consultation to pediatric clinics in greater New Orleans. TEC consultation includes screening during routine well-child care visits (“WCHC”), as well as during routine consultations (“unscreened”). TEC is available to all pediatric clinics in the Greater New Orleans area, with the majority of clinics offering comprehensive, primary care, and specialty-based health centers. During TEC face-to-face consultation with families and providers, the Safe Environment for Every Kid (SEEK) was administered to 658 families from January 2013 to March 2015. TEC is available to all clinics in the TEC area. TEC consultation included on-site visit and demographic factors with TEC. TEC consultation included demographic factors with TEC providers using TEC’s curriculum.

**Measurement**

Safe Environment for Every Kid (SEEK) (Dubovsky et al., 2009). The SEEK is an evidence-based questionnaire designed to screen for ASDH including basic needs, safety, and caregiver well-being and stress. The SEEK includes 20 yes/no questions and takes approximately 3 minutes to complete. The TEC was updated from the SEEK by the original developers during this period and includes 14 yes/no questions from the SEEK.

**Prevalence population**

In response to clinical observations of common trauma in our population, TEC added 8 yes/no questions at the same time the program was updated to the updated SEEK. The trauma items are intentionally broad and include motor vehicle accidents, prolonged separation, neglect, sexual/physical, and bullying. Major medical/mental procedure, hospitalization, and major accidents or surgeries during the period.

**Early Childhood Screening Assessment (ECSA)**

The ECSA is a validated tool to screen children ages 3-5 for signs of mental health and related problems. It includes 42 items scored on a 3-point Likert scale, 36 of which focus on the child and 6 on which focus on the caregiver.

**Results**

Trama Burden by Demographic:

- **Trama Scale**
  - 17.3% of eligible children experienced at least one traumatic event
  - Range: 0-8 (SEEK), 0-13 (ECSA)

Adversity Load by Demographic Factors:

- **Adversity Load by Race**
  - Race: 0.15

Conclusions

- More than half of children seen in pediatric mental health consultation have experienced at least one ASDH by parent report on the SEEK.
- Among children referred for mental health consultation, caregiver stress and depression are the most prevalent.
- Among children in routine well-child visits, safety and basic needs are the most prevalent needs.
- ASDH and trauma reports are associated with clinical symptoms. In practices screening for ASDH, positive ASDH should trigger formal assessment of mental health concerns. In practices formally screening for mental health concerns, children with mental health symptoms should be screened formally for ASDH to ensure that all modifiable risk factors can be identified and addressed.

References

Internet Gaming Disorder Prevalence in the Hispanic Adolescent Community

Rosario-Fusté, Ariana, Soto-Raíces, Ohel
Department of Psychiatry, Universidad Central de Caribe School of Medicine
American Academy of Child and Adolescent Psychiatry Summer Medical Student Fellowship
American Academy of Child and Adolescent Psychiatry Endorsement Fund
AACAP’s 66th Annual Meeting; October 14-19, 2019, Chicago, IL

Abstract
In a world where technology advances have affected human interactions and health, a new disorder known as “Internet Gaming Disorder” (IGD) has been officially added to the Diagnostic Statistical Manual 5 (DSM-5). Scientist from different academic fields have investigated the prevalence, risk factors and consequences of IGD among many populations but unfortunately, most of these investigations are focused on non-Hispanic communities with the exclusion of Spain. Due to the lack of information, there is a scientific and social need to create more IGD studies that focus on the Hispanic community in countries such as Puerto Rico in which IGD investigations are either lacking or in preliminary stage. For this reason, the aim of this study was to develop a meta-analysis of IGD in the Hispanic adolescent community in order to establish if there is a prevalence of this disorder in this population and its effects on academic performance and social interactions. A search was conducted in PubMed using keywords such as “adolescents”, “internet gaming disorder”, “internet addiction” and “Hispanic” in order to find articles that met our inclusion criteria of (1) Hispanic population and (2) adolescents 12-18 years of age. After careful exploration, only five articles met our inclusion criteria. Through observation and studies, it became clear that online video games effects can resembled behaviors observed with addiction patterns.

Methodology
A bibliographic search was conducted on PubMed with the keywords “adolescents”, “internet gaming disorder”, “internet addiction” and “Hispanic” in order to find articles that met our inclusion criteria of (1) Hispanic population and (2) adolescents 12-18 years of age. After careful examination, only five articles met the inclusion criteria which led to a literary review and analysis for each article. In addition, the DSM-5 was added in order to have a better understanding of IGD.

Conclusion
IGD prevalence is persistent through out Hispanic adolescent population. IGD prevalence is higher in male adolescents.
Some studies suggest IGD has been linked to a broken home background.
All studies suggest that IGD has a direct correlation with negative social behaviors such as anxiety, depression and aggressiveness.
Some studies suggest that IGD could lead to poor academic performance in adolescents.

Further investigations
Since most of the published work regarding this community focuses on bigger countries such as Spain, upcoming scientific research should focus on expanding the sample size to other Hispanic countries. By doing so, a more representative and precise look at the prevalence of IGD within the Hispanic community could be achieved.

Acknowledgment
A special acknowledgement and gratitude to AACAP’s Endowment Fund, and the Greater Worcester Community Foundation funding this project. Furthermore, I would like to express my sincerest gratitude to my mentor Dr. Ohel Soto for guiding and supporting me in this process.

References

Table 1. Characteristics of the included studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Design</th>
<th>Sample</th>
<th>Setting</th>
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<tbody>
<tr>
<td>Torres-Rodriguez, A. et al.</td>
<td>2018</td>
<td>Clinical Study</td>
<td>Questionnaires</td>
<td>Male and female within 12-18 years of age</td>
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<tr>
<td>Buiza-Aguado, C. et al.</td>
<td>2018</td>
<td>Clinical Study</td>
<td>Questionnaires</td>
<td>Both sexes within 12-18 years of age</td>
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<tr>
<td>Buiza-Aguado, C. et al.</td>
<td>2017</td>
<td>Meta-analysis</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Núñez-Valladaud, M. et al.</td>
<td>2013</td>
<td>Clinical Study</td>
<td>Questionnaires</td>
<td>Both sexes within 14-17 years of age</td>
</tr>
<tr>
<td>Lam-Figueroa, N. et al.</td>
<td>2014</td>
<td>Clinical Study</td>
<td>Questionnaires</td>
<td>Both sexes within the secondary educational system</td>
</tr>
</tbody>
</table>

Table 2. IGD prevalence and correlations within the included studies

<table>
<thead>
<tr>
<th>Study</th>
<th>IGD prevalence</th>
<th>IGD correlation with</th>
<th>IGD correlation with</th>
<th>IGD correlation with</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torres-Rodriguez, A. et al.</td>
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<td>Buiza-Aguado, C. et al.</td>
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<td>Núñez-Valladaud, M. et al.</td>
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<tr>
<td>Lam-Figueroa, N. et al.</td>
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</table>

Note: A represents a study that reports IGD prevalence within an adolescent community. Direct represents a direct correlation between two terms. Indirect represents an indirect correlation between the two terms.
INTRODUCTION
In Riverside County, the tenth most populous county in the United States with over 2.4 million residents, Asian American and Pacific Islanders (AAPI) comprise 6.6% of the population, while a mere 1.59% of AAPI adults and 0.74% of AAPI youths utilized county-wide mental health services. There remains limited data on the barriers to the utilization of mental health services by AAPI communities in the Inland Southern California, especially in the child and adolescent population.

OBJECTIVES
- To examine the knowledge and attitudes of mental health care and mental illness held by AAPI adults.
- To understand how culture and immigrant generation shape stigma around mental health.
- To understand barriers and facilitators affecting mental health service utilization by AAPI youths in Riverside County.

MATERIALS & METHODS
Procedure: Between June 2019 and August 2019, 18 participants were recruited for individual, in-depth interviews. Participants were required to be aged 18 and older and to have sufficient cognitive ability to understand and complete the interview. Recruitment efforts were made primarily through the Riverside University Health System-Behavioral Health’s Asian American Task Force (RUHS-BH AATF) in which emails, fliers, and telephone calls were used to facilitate recruitment. Interviews were audio-recorded, transcribed verbatim, and analyzed utilizing an inductive approach. Participation was voluntary.

Analysis followed a deductive approach in which codes were grouped into separate categories and clustered thematically.

RESULTS
- **Intergenerational Stigma**
  - "My extended family hadn’t expressed any opinions about mental health until I affected my kid because now it’s their family member. It’s easier for them to talk, how do we make it better? How do we make it go away? They just want their grandchildren to be normal. Outside of that, they haven’t really expressed thoughts one way or the other, asking how this is going, how the treatment is going, what the prognosis are. They seem to treat it as if it’s a curable disease, but in my own case, I have a developmental condition that is going to be part of his life forever."

- **Shame Culture**
  - "First of all, it’s hard because I have my moments, my ups and downs, I’ve lost a lot of friends that way. I’ve learned not to share certain things because of judgment because people would break away and not give me a chance. People would say that I’m immature."

- **Cultural Perceptions**
  - "My friend is Vietnamese and may have some kind of deception going on. I suggested therapy to her, and she said that therapy is for White people."

- **Stigma Within Professional Spaces**
  - "There is also an overrepresentation when it comes to the awareness of mental health issues with children and schools. Everyone is over-concerned by their kids might have a mental health issue when they have math."

- **Mental Health & Education**
  - "There’s also this mentality of how Asian American immigrants had to deal with, acculturating and overcoming social barriers by working really, really hard. First generation Asian Americans had to work very hard to overcome social barriers. That leads to a culture of how you can work your way out of a lot of things, it stays quiet, but it does make every step much more challenging."

- **Immigrant Experience**
  - "There’s also this mentality of how Asian American immigrants had to deal with, overcoming social barriers by working really, really hard. First generation Asian Americans had to work very hard to overcome social barriers. That leads to a culture of how you can work your way out of a lot of things, it stays quiet, but it does make every step much more challenging."

- **Ethnicity (n=30)**
  - Korean: 16.7%
  - Chinese: 11.2%
  - Vietnamese: 12.3%
  - Thai: 27.6%

**Demographics**

**Diagrams**

**DISCUSSION**
Our study elucidates the persistence of stigma through generations and in professional spaces as barriers that prevent AAPI youth from receiving mental health services. Stigma is multifaceted, cultural perceptions, immigrant and refugee experience, and religious beliefs persist through generations and in parenting. Misconceptions of mental illness can perpetuate stereotypes, limiting discussions of mental health among parents, caregivers, and youth. Facilitators to mental health service utilization included school interventions and support from peers with personal experiences with the mental health care system.

Current interventions for Riverside County include the RUHS Prevention & Early Intervention (PEI) programs that aim to engage and equip individuals prior to the development of serious mental illness or emotional disturbances. Participants encouraged future interventions to involve outreach efforts toward community and religious spaces in which AAPI groups congregate, as well as increasing the amount of culturally-humble mental health care professionals in outpatient and school settings.

**CONCLUSION**
As one of the largest growing ethnic groups in the United States, Asian Americans, termed the "model minority," have low utilization of professional mental health care support. This study demonstrates the continued need for county-wide and cultural-specific interventions for mental health service outreach to AAPI families. These results will contribute to the framework through which county-wide mental health services can further support the unmet mental health needs of Riverside County’s AAPI population and encourage the utilization of professional mental health services.

**ACKNOWLEDGEMENTS**
This project was funded by the American Academy of Child and Adolescent Psychiatry’s (AACAP) Summer Medical Student Fellowship, supported by AACAP’s Endowment Fund and under the mentorship of Dr. Richard J. Lee, MD. We would like to further acknowledge Gladys Lee and the RUHS-BH Asian American Task Force for their continual support in conducting this research and in their advocacy efforts for Riverside County’s mental health outreach to the AAPI community.
Simplifying Somatization: Reducing Healthcare Utilization with a Clinical Pathway for Pediatric Somatic Symptom and Related Disorders

Klein E.I, Malis N,M1,2, Pardon A1, Monroe K.K1,4, Sturza J.S1,4, Hutton D1,2, Soufe N1,2,5, Kullgren K.A1,4
University of Michigan1, School of Public Health1, Department of Psychiatry1, Department of Pediatrics1, Department of Emergency Medicine5

Background

Somatic Symptom and Related Disorders (SSRD): somatic symptoms accompanied by excessive thoughts, feelings, and/or behaviors, or preoccupation with having/getting a disease, leading to distress/dysfunction; not explained by general medical condition, e.g., Somatic Symptom Disorder, Functional Neurological Symptom Disorder1

Solution

Clinical Pathway (CP): Standardized ED and inpatient care of children with suspected SSRDs
Set expectations for admission length
Concurrent medical and mental health workup
Implemented Oct 2015 after 1yr development
See right, "Inpatient SSRD Pathway"

Methods

Pre-Pathway
Sep 2014 - Sep 2015

Control N=53

Time-Match N=54

Post-Pathway
Oct 2015 - Nov 2016

Pathway N=55

Inclusion criteria: Admitted onto pathway or admitted for somatic complaint, given SSRD diagnosis and psychiatry or psychology consult
Exclusion criteria: Diagnosis of psych factors impacting medical condition; direct PDM admission
Time-Match Control: Admitted post-protocol but not enrolled
Analysis: Chi-squared and two/three way ANOVA of median/most outcomes of control, time-match, and protocol groups using data from EMR and Pediatric Health Information System (PHIS) Database

Results

Median Total Costs

<table>
<thead>
<tr>
<th></th>
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<th>Time-Match</th>
<th>Pathway</th>
</tr>
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<tbody>
<tr>
<td>$50,000</td>
<td>$40,000</td>
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Categorical Costs

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<tr>
<td>$15,000</td>
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Length of Stay (Days)

<table>
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<tbody>
<tr>
<td>3.5</td>
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<td>2.0</td>
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Subspecialty Consults

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<th>Pathway</th>
</tr>
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<tbody>
<tr>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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</table>

No significant differences control vs. pathway:
- Procedures (9%)
- Diagnostic testing (EKG, EEG, 16-25%)
- Non-invasive imaging (MRI, US, 22-39%)
- 30-day readmissions (9-12%)

Invasive imaging (CT, MR, NUC, 18-37%)
- Time-match group received more invasive imaging, likely related to reason not enrolled (e.g., diagnostic unavailability)

Discussion

- First study to evaluate an SSRD pathway
- CP significantly decreased admission costs, length of stay, and consultations without reducing work-up
- "Step-wise" reductions likely indicate change in institutional culture around SSRDs—even for patients not directly enrolled in CP

Future Directions:
- Disparity analysis (mental health gender, race, SES, zip code)
- Qualitative evaluation of institutional culture change and perceptions of CP

References


This research is funded by the Department of Pediatrics Children’s Health Research Award & the AAP/CAM Summer Medical Student Fellowship.
Analyses of the BLOC and BLAS Rating Scales and Their Impact on Adolescents Diagnosed with Obsessive-Compulsive Disorder and/or Anxiety Disorder

Sarah Laudon BS, Lin Lu MD, Ph.D, Tamzin Batteson BSc, Marc Porter
Rosalind Franklin University of Medicine & Science

AIM
To examine if the BLAS (Blink light anxiety scale) and BLOC (Blink light obsessive-compulsive) scales are useful to patients in comparison to standardized rating scales.

MEASURES
Patients were chosen randomly after seen by Dr. Lu and given a DSM-5 standardized rating scale (PROMIS or Y-BOCS) as well as the blink light rating scale (BLAS or BLOC). After each scale, patients filled out a feedback form with a 0-4 rating for two questions:

1. How useful is this scale in helping you understand how much anxiety is effecting your daily life?

2. How useful has this scale be in helping you make daily decisions to face the fear or distract yourself?

RESULTS
- The Pearson correlation indicated that there was a significant positive association between BLAS understanding and PROMIS useful ($r(49)=.506, p=0.01$)
- The Pearson correlation indicated that there was a significant positive association between the BLAS score and the PROMIS T-score ($r_s(49)=0.692, p=0.01$).

KEY IMPLICATIONS
- Both the standardized and blink light scale served a role in adolescents diagnosed with anxiety disorder
- The blink light scale can be modified to better suit the patient as they can use whatever analogy they feel is best for them

PARTICIPANTS

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Anxiety</th>
<th>Anxiety and OCD</th>
<th>OCD</th>
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<tbody>
<tr>
<td>Females</td>
<td>23</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Males</td>
<td>23</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Average age</td>
<td>14.8</td>
<td>15</td>
<td>15</td>
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FEEDBACK SCORES

<table>
<thead>
<tr>
<th>Scale</th>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLAS</td>
<td>understanding</td>
<td>49</td>
<td>2.582</td>
<td>0.8458</td>
</tr>
<tr>
<td>BLAS</td>
<td>useful</td>
<td>49</td>
<td>2.33</td>
<td>0.7919</td>
</tr>
<tr>
<td>PROMIS</td>
<td>understanding</td>
<td>49</td>
<td>2.33</td>
<td>0.819</td>
</tr>
<tr>
<td>PROMIS</td>
<td>useful</td>
<td>49</td>
<td>2.08</td>
<td>0.862</td>
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</tbody>
</table>

*Due to the small sample size of patients diagnosed with OCD, we were unable to determine any significant data. We will be continuing to enroll patients diagnosed with OCD to achieve a better sample size.*

ACKNOWLEDGEMENTS
Special thank you to Dr. Lu and staff at the Rosalind Franklin Behavioral Health Clinic for their support and assistance throughout this project. We would also like to acknowledge Tamzin Batteson for all her help with the statistics and Anneke Archer for her assistance throughout this summer fellowship. A heartfelt thank you to the AACAP for this incredible opportunity.

FUNDING
Funding for this project was provided by the American Academy of Child & Adolescent Psychiatry’s (AACAP) Endowment Fund as part of the Summer Medical Student Fellowship Program.
Predictors of Treatment Participation in Children’s Mental Health

Andrew Rylaarsdam, BA; Liza Suarez, PhD; Lauren Cox, LCSW; Kelley A. Volpe, MD

No disclosures

Background

Missed appointments and treatment attrition may result in inefficient and ineffective use of available mental health resources. Client retention is a particular challenge in child and adolescent behavioral health due to the presence of family related variables (e.g. parenting behaviors, socioeconomic status, and household size) in addition to child problem related variables (e.g. symptom severity, co-morbid disorders, and problem longevity) (Miller, Southam-Gerow & Allin 2008). Previous studies have also shown greater risk for treatment dropout among racial and ethnic minority populations (Gonzalez et al., 2017; Miller, Southam-Gerow & Allin 2008; Kendall & Sugarman, 1997; Kazdin, Stolar & Marciano, 1995). It is important to identify potential factors that may account for this observed difference. Understanding specific underlying causes of treatment attrition will enable clinicians to implement targeted interventions for at risk patients.

Methods

Table 1. Demographic information

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
<th>Range</th>
<th>Female</th>
<th>Male</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>3-18</td>
<td>52%</td>
<td>48%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>52%</td>
<td>48%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td>Asian</td>
<td>36%</td>
<td>64%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Caucasian</td>
<td>36%</td>
<td>64%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>African</td>
<td>5%</td>
<td>95%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td>Owner</td>
<td>52%</td>
<td>48%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rent</td>
<td>48%</td>
<td>52%</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Out of the 204 participants who met inclusion criteria for this study, 78 with complete data were included in the analyses.

Measures

Demographic characteristics: used in the analyses included living situation (living in a 2-parent household vs. other), race/ethnicity (self identifying as Caucasian vs. other).

Treatment completion: Billing and charting records were reviewed to code treatment completers as attending 16 psychotherapy sessions within the first 24 weeks of treatment.

Neighborhood Context: Census Tract indicators based on participant’s residential address were gathered to obtain percentage of residents above the poverty level, percentage of residents with a high school degree, percentage of owner occupied housing units.

Children’s Depression Inventory: Kovacs, 1992. The CDI is a 27-item self-rated questionnaire that measures symptoms of depression for youth ages 7-71. The CDI is an important screening tool for identifying children at risk for depression. It has been validated in a variety of settings and populations.

CDI Interpersonal Problems Scale: Kovacs, 1992. The CDI Interpersonal Problems Scale is a subscale of the CDI that assesses the extent to which a child has social, emotional, and behavioral problems in interpersonal situations.

Treatment participation outcomes are associated with:

- Living with both parents
- Symptom severity
- Interpersonal problems

Ethnicity has no predictive value for treatment participation outcomes when controlling for these variables.

Results

Table 2. Demographic characteristics differences in treatment completion (Chi-square comparisons)

<table>
<thead>
<tr>
<th>Parameter</th>
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<th>X^2</th>
<th>p</th>
</tr>
</thead>
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<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>78</td>
<td>16.8</td>
<td>0.001</td>
</tr>
<tr>
<td>Female</td>
<td>78</td>
<td>16.8</td>
<td>0.001</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>56</td>
<td>36%</td>
<td>0.15</td>
</tr>
<tr>
<td>African</td>
<td>12</td>
<td>8%</td>
<td>0.01</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10</td>
<td>7%</td>
<td>0.02</td>
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<tr>
<td>Other</td>
<td>16</td>
<td>11%</td>
<td>0.03</td>
</tr>
<tr>
<td>Housing</td>
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<td></td>
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</tr>
<tr>
<td>Owner</td>
<td>107</td>
<td>71%</td>
<td>0.007</td>
</tr>
<tr>
<td>Rent</td>
<td>97</td>
<td>63%</td>
<td>0.007</td>
</tr>
<tr>
<td>MASC Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T score</td>
<td></td>
<td></td>
<td>0.001</td>
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</table>

Table 3. Logistic Regression Model Including Demographic Factors Only

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Wald X^2</th>
<th>Odds Ratio Estimate</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-0.48</td>
<td>0.53</td>
<td>0.76</td>
<td>0.62</td>
<td></td>
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<tr>
<td>Race/Ethnicity</td>
<td>-0.12</td>
<td>0.34</td>
<td>0.11</td>
<td>0.89</td>
<td>0.46</td>
<td>1.75</td>
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<tr>
<td>Age</td>
<td>0.01</td>
<td>0.04</td>
<td>0.03</td>
<td>1.01</td>
<td>0.93</td>
<td>1.09</td>
</tr>
<tr>
<td>MASC Total</td>
<td>-0.82</td>
<td>0.34</td>
<td>5.73*</td>
<td>0.44</td>
<td>0.22</td>
<td>0.86</td>
</tr>
<tr>
<td>Constant</td>
<td>0.56</td>
<td>0.52</td>
<td>1.56</td>
<td>0.51</td>
<td>0.27</td>
<td>0.97</td>
</tr>
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</table>

Table 4. Logistic Regression Model Including Predictor Variables

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Wald X^2</th>
<th>Odds Ratio Estimate</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-0.45</td>
<td>0.57</td>
<td>0.09</td>
<td>0.90</td>
<td>0.74</td>
<td>1.10</td>
</tr>
<tr>
<td>Age</td>
<td>0.10</td>
<td>0.10</td>
<td>0.00</td>
<td>1.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>0.03</td>
<td>0.57</td>
<td>0.03</td>
<td>1.03</td>
<td>0.33</td>
<td>3.17</td>
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<tr>
<td>Living situation</td>
<td>-1.36</td>
<td>0.68</td>
<td>4.03*</td>
<td>0.26</td>
<td>0.07</td>
<td>0.97</td>
</tr>
<tr>
<td>CDI Interpersonal Problems</td>
<td>-0.11</td>
<td>0.04</td>
<td>6.56*</td>
<td>0.90</td>
<td>0.83</td>
<td>0.97</td>
</tr>
<tr>
<td>MASC Total</td>
<td>0.06</td>
<td>0.03</td>
<td>4.89*</td>
<td>1.06</td>
<td>1.01</td>
<td>1.12</td>
</tr>
</tbody>
</table>

Acknowledgements

Work supported by the AACAP Summer Medical Student Research Fellowship

Implications & Conclusions

The three predictors of treatment retention found to be significant in our combined model (living situation, symptom severity, and co-morbid interpersonal problems) are similar to those indicated by previous studies (Örengül & Görmez, 2017; Lee et al., 2019). However, several previous studies also include ethnicity as an independent predictor of treatment retention (Gonzalez et al., 2017; Miller, Southam-Gerow & Allin 2008; Kendall & Sugarman, 1997; Kazdin, Stolar & Marciano, 1995). In contrast, our findings show that even though ethnicity is associated with the lower treatment completion rate observed in ethnic minority youth. This is an important distinction, because recognition of these more specific underlying factors can aid clinicians in selecting targeted interventions to improve treatment retention. Such interventions include assessment of barriers to treatment, psychoeducation about services, and expectation setting (Becker et al., 2015).

References

OVERVIEW

- Morphometric changes in grey matter are thought to continue across childhood, adolescence and into adulthood. (Krongold et al., 2017).
- Ecological influences such as early life adversity or traumatic stress exposure may alter trends in grey matter development (Heyn et al., 2019). However, while linking non-normative brain development to environmental influences or psychopathology relies on a firm reference for normative brain development.
- While cross sectional and longitudinal studies suggest overall grey matter thinning over time (Krongold et al., 2017) current models fail to account for differences in pubertal development that may impact brain development.
- Using data from a Census-representative nationally-distributed sample, the current study seeks to identify volumetric change in grey matter across development which also account for differences in pubertal development.

METHOD

- Anatomical MRI scans and secondary data come from the NIH MRI Study of Normal Brain Development
- Scans were obtained at up to three time points from typically developing youth ranging in age from 4.9-18 years.
- All images were screened for quality control at time of scan by the original investigators (BDCG, 2012).
- Preprocessing and cortical reconstruction of received scans was performed using the automated, atlas-based process in FreeSurfer v6.0.
- Analyses were conducted using hierarchical linear modeling (HLM v7.04; Raudenbush et al., 2011), as appropriate for non-independent observations.

DISCUSSION

- Individual increases in pubertal status may attenuate grey matter decline during the typical cortical thinning of pediatric development for boys.
- Pubertal status does not appear to impact the decline in grey matter of developing girls.
- The dynamic change in grey matter volume across age are observed, and further confirm that such change may continue well into early adulthood.
- Our findings demonstrate the viability of an approach that distinguishes between and within-person longitudinal change in ROI volumes and accounts for differences in pubertal development between persons.
- This study is strengthened by its use of a large, representative sample of normative youth in a wide age range. Notable limitations include a reliance on 1.5T scans for volumetric estimates, and the lack of true longitudinal data from across the ages of interest.
- Future research will compare typical grey matter development with the grey matter development of children with stressful early life events or trauma.

Models which account for between-subjects differences may be more effective in characterizing typical grey matter development.

Puberty may attenuate grey matter decline in boys.

Participant Demographics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>330</td>
</tr>
<tr>
<td>Gender</td>
<td>54% Female, 46% Male</td>
</tr>
<tr>
<td>Average Age</td>
<td>11.37 years</td>
</tr>
<tr>
<td>Age range</td>
<td>4.88-18.53 years</td>
</tr>
<tr>
<td>Average Pubertal Stage</td>
<td>2.62</td>
</tr>
<tr>
<td>Average Adjusted Family Income</td>
<td>$72,000</td>
</tr>
</tbody>
</table>

Within-subjects (Level 1):

\[
\text{GreyMatter}_{it} = \beta_0 + \beta_1 \text{(SINCE1ST)} + \beta_2 \text{(ETIV)} + \epsilon_{it}
\]

Between-subjects (Level 2):

\[
\begin{align*}
\beta_0 &= \beta_{00} + \beta_{01} \text{(AGE@1STSCAN)} + r_{0i} \\
\beta_1 &= \beta_{10} + \beta_{11} \text{(AGE@1STSCAN)} + r_{1i} \\
\beta_2 &= \beta_{20}
\end{align*}
\]

REFERENCES

CYP2C19 Metabolizer Status Predicts Escitalopram Pharmacokinetics in Adolescents with Generalized Anxiety Disorder

Anne Tidball, BS,1 Ethan Powell, BS,2 Laura B. Ramsey, PhD,2 Jeffrey A. Mills, PhD,3 Sara T. Vanney, BS,3 Sarah A. Mossman, MACPR1, Heidi Schroeder, BS,3 Melissa P. DeBello, MD, MS,1 and Jeffrey R. Straw, MD1

1Department of Psychiatry & Behavioral Neuroscience, University of Cincinnati College of Medicine; 2Department of Pediatrics, Division of Child & Adolescent Psychiatry and Imaging Research Center, Cincinnati Children’s Hospital Medical Center, Cincinnati OH; and 3University of Cincinnati, Carl H. Lindner College of Business

INTRODUCTION
- Selective serotonin reuptake inhibitors (SSRIs) are a major class of antidepressants and anxiolytics, and their use is generally well tolerated by patients with this anxiety disorder. However, patients with generalized anxiety disorder can experience adverse effects, including those related to metabolism.
- CYP2C19 is a cytochrome P450 enzyme that metabolizes about 20% of all drugs, including SSRIs. It has been shown to contribute to the variability in drug metabolism and response to SSRIs.

METHODS
- Study Design: Open-label, single-center, prospective, randomized, placebo-controlled trial.
- Participants: Adolescents aged 12-17 years with generalized anxiety disorder (GAD) were included.
- Escitalopram: Participants were randomized to receive escitalopram 10 mg daily for 14 days, followed by a 15 mg dose on Day 15.
- Blood samples: Blood samples were collected at baseline, and at 1, 2, 3, 4, 5, 7, and 14 days after starting escitalopram.

RESULTS
- Escitalopram exposure (AUC 0-15 mg) was higher in patients with CYP2C19 phenotype LM compared to PM (p=0.005).
- The CYP2C19 LM phenotype was significantly associated with slower escitalopram metabolism (p=0.024) compared to PM.
- Greater medication exposure and lower clearance were associated with more activation-related adverse events.

Slower CYP2C19 metabolism is associated with higher C_MAX and greater escitalopram exposure in youth.

Greater medication exposure and lower clearance are associated with more activation-related adverse events.
Maternal 15q11-q13 Duplication Syndrome with ASD: Mood Stabilization by Carbamazepine

Christopher George Viamontes¹, Jorge Castillo Gonzalez², Fedra Najar, Edwin H. Cook Jr.²

¹University of Illinois at Chicago, College of Medicine, Departmental Psychiatry, University of Illinois at Chicago

BACKGROUND

Autism Spectrum Disorder (ASD) is characterized by deficits in social communication and restricted and repetitive behavior patterns which present in early development and cause impairment in functioning. 1 Maternal 15q11-13 duplication syndrome (dup15q) is one of the most frequent and penetrant genetic abnormalities associated with ASD. 2 Genetic screening of patients with ASD has found rates of dup15q in the range of 0.25–1%. There are two chromosomal abnormalities associated with the syndrome, both of which involve the传统文化15q11-13 duplication syndrome critical region. The first results in an isodicentric chromosome 15 with two additional maternally derived copies of 15q11-2q31 and intrarobies of the region. The second results in an interstitial duplication of 15q11.2-q13.3 which typically gives trisomy of the region. 1 Isodicentric chromosomes are found in ~80% of patients and interstitial duplications are found in the remaining ~20% of cases. 1 dup15q syndrome has been associated with epilepsy, intellectual disability, hypotonia with motor delays, language impairment, social impairments, and ASD. Symptoms in patients with the isodicentric abnormality are generally more severe and there is a higher chance the patient will develop epilepsy. 1

Psychiatric symptoms, including aggression and hyperactivity, have been described as significant comorbidities in dup15q. 3,4 Mood disorders are one of the most common psychiatric comorbidities reported in individuals with ASD. 5 Mood changes can go unnoticed in some individuals with ASD because of an insufficiency in language skills needed to express their emotions, to describe changes in mood, or to verbalize biological symptoms of depression. While typical manic symptoms, such as over-sleeping, gambling, and other pleasurable goal-oriented behaviors, may not be present, behavior problems may be present in the form of aggression, intrusiveness, restlessness, or general agitation. Bipolar symptoms may be more notable and disruptive and overlap with impulsivity and irritability associated with a primary diagnosis of ASD. 6

Carbamazepine is prescribed in disorders including epilepsy, bipolar mood disorder, and neuropathic pain. Carbamazepine has several sites of action with voltage-dependent sodium channels as the main properties of carbamazepine as an anti-epileptic and mood stabilizer make it an effective in managing comorbid seizures in dup15q. Carbamazepine has not been reported to be used as a mood stabilizer in this population. In this poster, we describe the role of carbamazepine for use in mood stabilization of patients with dup15q.

METHODS

We retrospectively reviewed the charts of five patients presenting with maternal isodicentric 15q11-13 duplication syndrome and treatment for behavioral problems, and in four cases, seizures. Patients were followed by FN and EC in a retrospective review of the charts of five patients presenting with maternal dup15q11-q13 seeking ASD. 6 Mood changes can go unnoticed in some individuals with ASD because of an insufficiency in language skills needed to express their emotions, to describe changes in mood, or to verbalize biological symptoms of depression. While typical manic symptoms, such as over-sleeping, gambling, and other pleasurable goal-oriented behaviors, may not be present, behavior problems may be present in the form of aggression, intrusiveness, restlessness, or general agitation. Bipolar symptoms may be more notable and disruptive and overlap with impulsivity and irritability associated with a primary diagnosis of ASD. 6

CONCLUSIONS

In treating five patients with maternal isodicentric 15q11-13 duplication syndrome, carbamazepine more effectively stabilized mood than alternative treatments. The properties of carbamazepine as an anti-epileptic and mood stabilizer make it an option for treatment in this population with high risk for seizures and comorbid psychiatric symptoms. Four of the five patients had epilepsy which denotes the importance of consultation between psychiatrists and neurologists to ensure optimal treatment management, especially when considering the overlap between mood stabilizers and anti-epileptics. Neuropenia was observed in two of the five patients

BIBLIOGRAPHY


FUNDING

This research was supported by the AACAP Summer Medical Student Fellowship in Child and Adolescent Psychiatry, supported by AACAP’s Endowment Fund, and partially funded by the Greater Worcester Community Foundation.

Table 1: Unsuccessful Psychopharmacotherapies

<table>
<thead>
<tr>
<th>Patient</th>
<th>Medication</th>
<th>Dose</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient 1</td>
<td>Lamotrigine</td>
<td>150mg</td>
<td>Improved</td>
</tr>
<tr>
<td>Patient 2</td>
<td>Oxcarbazepine</td>
<td>1800mg</td>
<td>No change</td>
</tr>
<tr>
<td>Patient 3</td>
<td>Valproate</td>
<td>1500mg</td>
<td>No change</td>
</tr>
<tr>
<td>Patient 4</td>
<td>Aripiprazole</td>
<td>15mg</td>
<td>No change</td>
</tr>
<tr>
<td>Patient 5</td>
<td>Carbamazepine</td>
<td>900mg</td>
<td>Improved</td>
</tr>
</tbody>
</table>

Table 2: Current Psychotropic Medications in Addition to Carbamazepine

<table>
<thead>
<tr>
<th>Patient</th>
<th>Medication</th>
<th>Dose</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient 1</td>
<td>Lamotrigine</td>
<td>150mg</td>
<td>Improved</td>
</tr>
<tr>
<td>Patient 2</td>
<td>Oxcarbazepine</td>
<td>1800mg</td>
<td>No change</td>
</tr>
<tr>
<td>Patient 3</td>
<td>Valproate</td>
<td>1500mg</td>
<td>No change</td>
</tr>
<tr>
<td>Patient 4</td>
<td>Aripiprazole</td>
<td>15mg</td>
<td>No change</td>
</tr>
<tr>
<td>Patient 5</td>
<td>Carbamazepine</td>
<td>900mg</td>
<td>Improved</td>
</tr>
</tbody>
</table>

Figure 1: Contacts With and Without Carbamazepine
Mental Health Service Needs, Utilization, and Associated Factors in Diverse Child Welfare Population

Margaret Yau, MS\textsuperscript{1}; Takesha Cooper, MD\textsuperscript{1,2}; Carl Feinstein, MD\textsuperscript{1,2}

\textsuperscript{1}University of California, Riverside, School of Medicine
\textsuperscript{2}Riverside University Health System-Behavioral Health

**Objectives**
- Past studies have found that children in the child welfare system exhibit a significantly higher number of mental health problems than the general population.
- Mental health service utilization is lower among racial/ethnic minority children than their non-Hispanic White counterparts.
- This study explores the demographics, trends, mental health needs, and mental health service (MHS) utilization of different racial/ethnic groups in the diverse child welfare population of Riverside County of Inland Southern California.

**Research Questions:**
1. How are the demographics of the child welfare population in Riverside County different from those in the United States and in California?
2. What child welfare-related factors are statistically dependent on race/ethnicity in Riverside County?
3. How do mental health service utilization and needs differ among different racial/ethnic groups in the Riverside County child welfare population?

**Methods**
- Demographics data of the child welfare population in Riverside County was compared to the corresponding national and state demographics.
- Statistical dependencies between race/ethnicity and factors tied to child welfare were assessed using chi-square tests of independence.
- Mental health needs assessment results from Child and Adolescent Needs and Strengths (CANS) and service utilization data in the Riverside County behavioral health clinics were acquired from Riverside University Health System Behavioral Health (RUHS-BH).
- Statistical variations between racial/ethnic groups were identified.

**Results**

**Demographic Trends**
Riverside County exhibits high racial/ethnic diversity:

![Riverside County Child Population by Race/Ethnicity (2018)](image)

The 2017-18 child welfare population demographics in Riverside County (n=5,204), California, and the U.S. are similar in that the following groups are represented by the highest numbers in their respective categories:

1. **Age:** children younger than one year old
2. **Gender:** female
3. **Race/Ethnicity:** Native American, African American
4. **Malreatment:** neglect, physical abuse

Chi-square tests showed that race/ethnicity is statistically dependent (p<0.001) on age and also on the following factors (p<0.01) while controlling for age:
- child welfare case service component
- maltreatment
- foster care placement type

**Mental Health Needs**
Data from initial CANS assessments performed between October 1, 2018 and July 11, 2019 with Riverside County child welfare population was used in the analysis of mental health needs. The dataset consists of data for a total of 514 children (58% Hispanic/Latino, 24% White, 15% Black, 2% Native American, 1% Asian).

The domain/module score and individual item score sums of different racial/ethnic groups were compared using Kruskal-Wallis test. Statistically significant need areas (p<0.05) specific to race/ethnicity are identified in the following:
- Caregiver, Supervision, Involvement with Care: Hispanic
- Substance Use: Native American caregivers
- Caregiver Emotional Responsiveness: Black and White caregivers of very young children
- Developing Relationships with Family and Interests: Black children
- Family Identity & Belonging: Hispanic children
- Victim/Witness-Criminal Acts: Black and Hispanic children

**Mental Health Service (MHS) Utilization**
At RUHS-BH, Native Americans and Asian/Pacific Islanders in the child welfare system are receiving MHS at lower rates than their Black, Hispanic, and White counterparts.

Chi-square goodness of fit test was performed to compare the number of children in each racial/ethnic group receiving 5 or more MHS visits per year with hypothesized values assuming all children receive MHS at the same rate. Statistically significant deviation from the hypothesized values was found, $\chi^2(6) = 56.41, p<0.001$.

**Conclusion**
- Racial/ethnic disparities in MHS utilization exist in the child welfare population, and more work is needed to understand and address the disparities.
- Child welfare associated characteristics, such as foster care placement and maltreatment type, were found to be statistically dependent on race/ethnicity.
- CANS assessments of children in different racial/ethnic groups as well as in the child welfare population as a whole can provide information on the mental health needs for diverse child welfare population, which can be used to facilitate resource allocation to meet those needs.

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**Per More Info**
Email: Margaret.Yau@medsch.ucr.edu

**Abstract**

**Poster**