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Welcome to JAACAP Connect!

What is JAACAP Connect?
All are invited! JAACAP Connect is an online companion to the Journal of the American Academy of Child and Adolescent Psychiatry (JAACAP), the leading journal focused exclusively on psychiatric research and treatment of children and adolescents. A core mission of JAACAP Connect is to engage trainees and practitioners in the process of lifelong learning via readership, authorship, and publication experiences that emphasize translation of research findings into the clinical practice of child and adolescent psychiatry.

Why do we need JAACAP Connect?
The field of child and adolescent psychiatry is rapidly changing, and translation of scientific literature into clinical practice is a vital skillset that takes years to develop. JAACAP Connect engages clinicians in this process by offering brief articles based on trending observations by peers, and by facilitating development of lifelong learning skills via mentored authorship experiences.

Who reads JAACAP Connect?
All students, trainees, and clinicians who are interested in child and adolescent mental health will benefit from reading JAACAP Connect, available online at www.jaacap.com/content/connect. AACAP members will receive emails announcing new quarterly issues.

Who writes JAACAP Connect?
You do! We seek highly motivated students, trainees, early career, and seasoned clinicians and researchers from all disciplines with compelling observations about child and adolescent psychiatry. We pair authors with mentors when necessary, and work as a team to create the final manuscripts.

What are the content requirements for JAACAP Connect articles?
JAACAP Connect is interested in any topic relevant to pediatric mental health that bridges scientific findings with clinical reality. As evidenced by our first edition, the topic and format can vary widely, from neuroscience to teen music choices.

How can JAACAP Connect help with my educational requirements?
Motivated by the ACGME/ABPN Psychiatry Milestone Project, JAACAP Connect aims to promote the development of the skillset necessary for translating scientific research into clinical practice. The process of science-based publication creates a vital set of skills that is rarely acquired elsewhere, and models the real-life thought process of translating scientific findings into clinical care. To bring this experience to more trainees and providers, JAACAP Connect aims to enhance mastery of translating scientific findings into clinical reality by encouraging publishing as education.

JAACAP Connect combines education and skill acquisition with mentorship and guidance to offer new experiences in science-based publication. We will work with students, trainees, early career, and seasoned physicians, regardless of previous publication experience, to develop brief science-based and skill-building articles. Opportunities for increasing knowledge and skills through publishing as education will be available through continued contributions and direct involvement with the JAACAP Connect editorial team, using an apprenticeship model.

Start Thinking About Authorship With JAACAP Connect
What trends have you observed that deserve a closer look? Can you envision reframing key research findings into clinical care? Do you want to educate others on a broader scale, thereby improving the health of children around the country, the world? We encourage all levels of practitioners and researchers, from students to attendings, to join in and participate. All are welcome, and you are invited.
Talking About Stigma

“Anything that’s human is mentionable, and anything that is mentionable can be more manageable. When we can talk about our feelings, they become less overwhelming, less upsetting, and less scary.”

– Fred Rogers

Fred Rogers, of Mister Rogers’ Neighborhood, might not have been a child psychiatrist, but he was deeply aware that children have feelings of fear, anger, and much more. Mister Rogers recognized that we need to build trust and comfort when talking about feelings with children instead of encouraging them to hide their emotions away. By stigmatizing mental health, it is more difficult for youth to feel comfortable about the worries, sadness, or anger they might be experiencing. This Winter 2020 issue of JAACAP Connect goes through many topics that have been negatively impacted by mental health stigma and discusses how child and adolescent psychiatrists can help to battle this stigma.

This issue will launch a new article type called Connect Corner, inviting all child and adolescent psychiatrists to review current forms of media, such as the latest video games, movies, TV shows, and books. Writers are encouraged to provide relevant education about the chosen media source and give guidance on how to talk to families about them. If you are interested in writing for Connect Corner or if there is something you would like to see reviewed, please feel free to reach out to connect@jaacap.org with your suggestions!

Stigma can exist in many forms and the level of impact on the child, adolescent, family, or system can vary. The authors in this issue deal with multiple areas of stigma in various topics. Lab to Smartphone authors Dr. Rettew and Ms. Wolf address the growth of new technologies to provide behavioral health services to youth, and how we must combat our own stigma towards innovative practices. Wolf and Rettew’s article builds on the discussion of internet-based therapeutic modalities, as discussed in the Fall issue of JAACAP Connect and our most recent JAACAP Connect Chat, which can be found on Twitter by searching #JAACAPConnectChats. Kim et al. take a look at the impact of cultural perceptions on depression in Korea, and the importance of normalizing evaluation and support for depression to help reduce the negative impacts of stigma. In the article by Ahmad et al., the stigmatization of electroconvulsive therapy (ECT) has led to state laws that limit access. Ahmad and colleagues help to guide child and adolescent psychiatrists to strategies that advocate breaking down some of the barriers to treatment that stigma has built. The article by Ms. Kass and Dr. Kaliebe shed light on the impact of various environmental factors on the development of depression, moving away from the stigma and blame that people with depression sometimes receive for their diagnosis. Drs. Rosen and Glowinski introduce us to a review of sensory processing disorders, and in doing so help to highlight the importance of good recognition and treatment of these disorders, and not just for children with autism spectrum disorders. With their experience as former teachers, Drs. Durbin and Harmon introduce us to an area where mental health stigmatization can be most rampant: the school system. By using their education background, the authors teach child and adolescent psychiatrists to navigate and collaborate with schools in their neighborhood.

This issue will also represent the second edition of Current Literature in Pediatric Psychosomatics (CLiPPs) as part of Connect. There will be three new reviews of articles, including autoimmune encephalitis diagnosis and treatment, boarding of pediatric patients in emergency departments, and looking at inflammation and the impact of mental health. If you are interested in reviewing an article for the CLiPPs section of JAACAP
Connect, please reach out by sending an email to connect@jaacap.org.

Hopefully, after reading this issue of Connect, you will take Mister Roger’s advice and have more conversations with children and adolescents about feelings and mental health. The impact of stigma can impair our patients and restrict the way we practice medicine. Don’t hesitate to utilize AACAP as a resource to start that conversation with law makers, school leaders, social media influencers, and families about stigma and the realities regarding mental health.

Justin Schreiber, DO, MPH
Editor

References
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Questions?
Contact us at cme@aacap.org.

www.aacap.org/moc
“After the whole Tide Pod challenge, I knew this generation was doomed. Nothing good can come from being raised on a steady dose of The Facebook and YouTube.” This comment was made by an attending physician from an older generation after passing a waiting room full of adolescents with their heads buried in their devices. This statement expresses frustrations encountered amongst colleagues regarding young patients and their struggles to communicate verbally.

As a Millennial, I have heard this sentiment of technology as the enemy many times over. At first, I found myself fixating on innovative ways to curb its potentially negative impact on our society. But technology is not going to disappear, and if history is any indication, it will only increase and continue to permeate our lives, and thus, our practices. Instead of fighting the invisible hand in the “cloud,” maybe it is better to consider how we use technology in our favor to the benefit of our patients?

Today’s patients are more than the “Tide Pod Generation.” They are Generation Z, the “Digital Natives.” They are better versed in technology, the internet, and social media than some of its creators. This is where we can capitalize on some of their savvy. Today there is an app for anything and everything, from turning on your oven, starting your car, and there are even apps that help you find the best app. And, of course, there are now therapy apps that specialize in eCounseling. These are platforms available both online and in “app stores” on wireless devices. They allow someone to find and connect with a certified therapist via telemedicine. Will these things put us all out of business? Probably not. Recommending an app is just that, a recommendation to utilize additional therapeutic resources. It is not a replacement of the patient-physician relationship.

Most professionals agree that finding the “right” therapist can be a lengthy, challenging process, but once a patient finally does make a connection, their healing can truly begin. Unfortunately, we have yet to find the most optimal means of streamlining this search process. This can leave some patients to feel more isolated, vulnerable, and disinterested in seeking help. At the click of a button, eCounseling apps allow users the opportunity to search, filter, and compare among qualified affiliated therapists. Furthermore, in the event a patient no longer feels that their relationship with their current therapist is therapeutic, they can switch to another provider on that platform. Any information that was previously shared via text or email can be shared with the new provider, alleviating the need to start from ground zero.

Digital natives have grown up in the world of 2-day shipping and TV “On Demand.” They are accustomed to fast results. These apps can place a therapist at their fingertips and provide therapy that can be customized and tailored to their active lifestyle and their style of communication. Apps such as Teen Counseling and TalkSpace Teen take teledmedicine to a new level with their multiple modalities of communication, including exchanging messages, chatting live, phone calls, and video conferencing. Although communicating via text message may not be the most elegant, formal, or informative means of communicating, this generation was raised on emojis. Let us not allow our thoughts of what “proper” communication should look like prejudge the significant impact eCounseling could have.

This area still requires substantial research. eCounseling has not been shown to be capable of substituting traditional face-to-face therapy. Whether it is because of adolescents’ own thoughts and ideas around the stigma of mental health treatment, or because of the
lack of qualified counselors in their geographic region, the reality for many youths is that these apps may be their only access to mental health services.

One drawback to eCounseling is that most insurance plans do not cover any of the online therapy apps, and if they do provide coverage the insurance copay is often higher than the actual membership fee. However, the membership can be covered by a flexible spending account. These apps are relatively affordable, starting as low as $128 per month.

When should we be thinking about utilizing these services? We all know there is a major shortage of mental health care providers, from social workers to physicians. This leads to increasingly long wait times for patients to begin engaging in psychotherapy. Perhaps this is an opportunity for additional research to be conducted on triaging care, helping identify patients that could most benefit from eCounseling vs. traditional face-to-face therapy. There may also be a place for a “hub and spoke” model, in which the hub is traditional face-to-face therapy and the spokes would be eCounseling.

As a community we need to recognize the value of these apps. Several countries with national health services are already utilizing technology as an effective treatment for mental health. Computer-assisted therapy (CAT) is evidence-based and has been around since the 1980s. More specifically, internet cognitive-behavioral therapy (iCBT) has been shown to be effective at ameliorating symptoms of anxiety and depression in children and adolescents. CAT, iCBT, and eCounseling are supplemental and not a substitution for in-person therapy and are valuable for certain low risk populations. Some apps even explicitly state that they “do not provide any official diagnosis, fulfill any court order, nor prescribe medications.” Please see the Fall 2019 issue of JAACAP Connect for two articles that specifically address the use of CAT (Dunne et al.) and iCBT (Nguyen et al.).

As a third-year medical student I am frequently asked by an array of individuals in the medical field, “What field do you want to go into?” and when I respond with “Child and adolescent psychiatry,” I can almost always predict their response, “Wow, great, wonderful…we need more of them.” Doctors, nurses, and social workers alike, this is how they all respond. Knowing this, knowing there is a shortage in the workforce, knowing that even for practicing child and adolescent psychiatrists there are only so many hours in a day tells me that we need to seriously consider the emerging technology at our disposal to help our very vulnerable population. Furthermore, the coronavirus (COVID-19) pandemic has illustrated the importance of being able to utilize alternative means of communication. The heightened fear and anxiety associated with events such as this highlight how technology is invaluable and could allow us to respond more efficiently to future health crises. These apps can not and will not replace the years of training required to become a qualified child and adolescent psychiatrist, but they can be part of our toolkit to help bridge this Grand Canyon sized gap in delivering children and adolescents mental, emotional, and behavioral health care.

References
About the Authors

David C. Rettew, MD, is an associate professor of psychiatry and pediatrics at the University of Vermont Larner College of Medicine and the Medical Director for the Child Division of the Vermont Department of Mental Health. He is author of the book Child Psychiatry: New Thinking About the Boundary Between Traits and Illness and the “ABCs of Child Psychiatry” blog on the Psychology Today website. You can follow him on Twitter at @PediPsych.

Candice Wolf, MS, is a third-year medical student at the University of Vermont Larner College of Medicine, Burlington. She is interested in a career in child and adolescent psychiatry and pediatric sleep medicine.

Disclosure: Dr. Rettew has received royalties for his blog for Psychology Today and from Guilford Press. Ms. Wolf has reported no biomedical financial interests or potential conflicts of interest.

To Participate in the Lab to Smartphone Column

To suggest a topic for this column or to inquire about co-writing a Lab to Smartphone column with Dr. Rettew or another child psychiatry mentor, please send an email to david.rettew@med.uvm.edu.
What is the American Association of Child and Adolescent Psychiatry, and how does it differ from the Academy?

The American Association of Child and Adolescent Psychiatry was formed in 2013 as an affiliated organization of the Academy as a way for CAPs to increase their advocacy activities. Activities such as AACAP’s Legislative Conference, federal lobbying, grassroots, and state advocacy are all under the umbrella of the Association. It also allows for the existence of AACAP-PAC, but no dues dollars fund our PAC.

The mission of the Association is to engage in health policy and advocacy activities to promote mentally healthy children, adolescents, and families and the profession of child and adolescent psychiatry.

How does the Association affect me as a dues paying Academy Member?

Your dues remain the same whether you choose to be an Association member or not. On your yearly dues statement, you have the option to opt out of the Association. If you opt out and choose not to be an Association member, a portion of your dues will no longer go towards our advocacy efforts. Regardless, your dues will be the same, but you will miss out on crucial advocacy alerts, toolkits, and activities.

For any further questions, please contact the Government Affairs team at govaffairs@aacap.org.
Depression is a major health problem among Korean youth. In Korean adolescents, depression often results in problems related to suicidal ideation and suicide attempts. The suicide rate is 4.7 per 100,000 in Korean youth ages 10 to 19 years and suicide is the leading cause of death in Korean adolescents ages 13 to 18 years.\(^1\) Notably, the suicide rate in Korea seems to be one of the highest among Organization for Economic Cooperation and Development (OECD) countries. Academic achievement is considered a key to overall success and is viewed as a survival response in highly competitive societies such as Korea.\(^2\) Therefore, considerable research attention has been paid towards the link between depression and Korean adolescents’ subjection to academic pressure and stress by both themselves and their parents.\(^3\) An adolescent’s depression tends to increase as they advance in grade level, and one fifth of Korean adolescents has thought about committing suicide, mainly due to academic stress.\(^3\) This article aims to describe the systematic implementation of a depression screening and treatment program within secondary schools in Korea.

**Prevalence of Depression in Korean Children and Adolescents**

Until now, few studies have used *DSM* criteria to investigate the prevalence of major depressive disorder (MDD) in representative community samples of Korean children and adolescents. The 2005 Seoul Child and Adolescent Mental Health Survey obtained depression prevalence estimates for a sample of 1,645 children (811 girls) ages 6 to 12 years. This study employed the parent version of the Diagnostic Interview Schedule for Children (DISC-IV) and the Children’s Depression Inventory (CDI) to assess for depression. Using the parent version of the DISC-IV, the estimated prevalence of MDD in this population was 0.1%. Results from the CDI, which assessed children’s self-reported depression, revealed a 1.9% of prevalence of moderate to severe depressive symptoms.\(^4\) Although there have been no reports of the prevalence of adolescent (13 and older) MDD based on *DSM* criteria, prevalence of depressive symptoms among Korean adolescents has been reported to be high. A Korean study using the Center for Epidemiologic Studies Depression Scale (CES-D) found that 17.4% of boys and 20.6% of girls reported experiencing a depressive mood.\(^5\) Another study of Korean adolescents, using the CES-D, reported the prevalence of depression to be 11.1% in boys and 19.8% in girls.\(^6\) According to a 2017 report of the 17th Korea Youth Risk Behavior Web-based Survey (KYRBWS), which is similar to the Youth Risk Behavior Surveillance System in the United States, 16.4% of male seventh graders, 21.4% of male tenth graders, 24.4% of female seventh graders, and 29.6% of female tenth graders answered positively on the survey item asking about depressed mood.\(^7\)

**Justification for the Annual Nationwide Survey**

In collaboration with the Ministry of Education, members of the Korean Academy of Child and Adolescent Psychiatry (KACAP) have developed and revised mental health questionnaires for administration to children and adolescents within academic settings since 2003.\(^8\)\(^9\) Prior to 2006, the act that dictated how health care was delivered at schools, the School Health Act, did not include screening and referral for mental health treatment. After 2006 it was revised, assigning this role to school principals. Following the School Health Act revisions, schools in a few districts in Seoul piloted mental health screening instruments developed by the KACAP. In 2011, national attention was drawn to the topic of adolescent depression and suicide when a middle-
school boy ended his life by jumping off the seventh floor of a building as a result of school bullying. For more than 6 months, 2 classmates had physically abused and humiliated him (eg, coercing him into playing online games in order to earn high score even when they were offline, forcing him to eat biscuits off the ground, etc.). His suicide note, which detailed long-standing agony and helplessness, was shown on mass media; related reports continued for at least 3 months. The case came as a shock to many Koreans and highlighted a need for the government to address the issue of school bullying. At the time, members of the KACAP suggested that school bullying and suicide among adolescents could be linked to various mental illnesses affecting both victims and perpetrators. They further suggested the establishment of a mental health screening system in order to help adolescents talk about their adversities openly.

Based on prevailing notions of the relationships between bullying, mental illness, and suicide, school-based mental health screening for children and adolescents went from voluntary to mandatory in Korea in 2012. Derived from policies developed by Professor Yee-Jin Shin, a child and adolescent psychiatrist and former member of the National Assembly from 2012 to 2016, the Ministry of Education designated and funded 2 centers for policy research and implementation.

How We Performed the Annual Nationwide Survey

According to the School Health Act and the related enforcement rules and decree, all first, fourth, seventh, and tenth graders in Korea are required to undergo mental health screening. Parents of first and fourth graders complete the Personality and Mental Health Screening Questionnaire, version 2 (CPSQ-II), online from home. The CPSQ-II is comprised of an anxiety/depression subscale because these two constructs could not be separated through factor analysis. In addition, seventh and tenth graders rate themselves over a three-month period on the Adolescent Personality and Mental Health Problems Screening Questionnaire, version 3 (AMPQ-III), online from their schools. Parental rating is not included in the AMPQ-III. The AMPQ-III consists of 62 items with 2 major domains, the Personality and the Mental Health Problems domains. Most items, except those regarding perceived physical or mental health status and willingness to referral, are scored using a 4-point Likert scale from 0 to 3. The correlation coefficient for the test-retest reliability was 0.92 and the Cronbach’s alpha was 0.88. There are 38 items on the Mental Health Problems domain in the AMPQ-III, and 7 of these items comprise the Mood Problems subscale. Specific items include: 1) “I have often been sick here and there for no apparent reason.” 2) “I had serious mood swings for no apparent reason.” 3) “I felt everything was troublesome and boring.” 4) “I worried before things actually happened.” 5) “I become irritated when adults instruct me to do this and that.” 6) “I felt like dying.” 7) “I felt depressed or irritated for no apparent reasons.” In addition, there were two items regarding suicidal ideation and planning in the Suicide Related subscale: 1) “I felt like dying.” 2) “I devised a detailed plan to kill myself at least once.” A score of 2 or more in the Suicide Related subscale score are regarded as at-risk for suicide. Such items may reflect diverse manifestation of depression and related comorbidities. At-risk students are identified using the total score obtained on the Mental Health Problems domain and on items relating to suicidal ideation. Students obtaining a high score on one subscale only (ie, a subscale associated with depression) are not considered to be at risk, due to limited resources available for nationwide mass screening and response required for positive screens.

Results for the 2014–2016 surveys can be found in Table 1, which showed that youth identified at risk were at 4.5% (2014), 3.2% (2015), 3.2% (2016). Of these youth were at risk, referral rates to regional hospitals and psychiatric outpatient clinics or external specialized institutes were at 68.9% (63,400/92,018), 70.3% (43,297/61,590), and 76.2% (46,930/61,588) from 2014-2016. In general, 58.5% of parents and 66.4% of teachers rated their overall satisfaction of the survey at more than 4 out of a total of 5 points. Results of the 2017 survey can be found in Table 2.
If children and adolescents’ CPSQ-II or AMPQ-III scores exceed the threshold for identifying at-risk groups (screen positive), supplementary interviews are conducted by school counselors. Following this interview, final at-risk students are screened. During supplementary interview detailed history and a suicide risk assessment was performed. Among female students, 5.3% of seventh graders and 4.1% of tenth graders reported positively; after the interview, these figures decreased to 2.8% and 2.5%, respectively.

**What We Did After the Annual Nationwide Survey**

The School-Community Cooperation Model for Students’ Mental Health was implemented from 2013 to 2017. In this model, it is recommended that each regional Office of Education establish an intervention and referral system for at-risk students. Emphasis is placed not only on referral to mental health professionals outside schools, but also on public education. Further, early intervention programs (ie, for depression, The Jumping Blue,13 which was based on the Adolescent Depression Awareness Program by Johns Hopkins University) were recommended for adolescents. In 2015, 38 seminars were held on adolescent depression and suicide by child and adolescent psychiatrists, in which 11,110 administrators from 11,621 schools participated. In the same year, student suicide had been at its lowest within the last 10 years. Many psychiatrists in the community took on roles as consulting psychiatrists in schools, whereas prior to that, they did not have the opportunity to actively participate in school-based mental health. In schools that adopted this model, teachers’ awareness regarding school mental health resources (z=-2.39, p=0.017), school policy and practice (z=-3.972, p=0.0001), school climate (z=-2.076, p=0.038) increased compared with baseline.14

Despite these efforts, there were still unmet needs in the management of at-risk students due to social prejudice and family factors (economic problems, lack of awareness, etc.). Although overall referral rates were approximately 70% or more, still many at-risk students could not

<table>
<thead>
<tr>
<th>Year</th>
<th>Total No. of First, Fourth, Seventh, and Tenth Graders</th>
<th>Participants</th>
<th>At-Risk for General Mental Health and Suicide</th>
<th>At-Risk for Suicide</th>
<th>Referral</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>2,066,108</td>
<td>2,049,307 (99.2)</td>
<td>92,018 (4.5)</td>
<td>24,793 (1.2)</td>
<td>63,400 (3.1)</td>
</tr>
<tr>
<td>2015</td>
<td>1,924,727</td>
<td>1,910,031 (99.2)</td>
<td>61,590 (3.2)</td>
<td>15,398 (0.8)</td>
<td>43,297 (2.2)</td>
</tr>
<tr>
<td>2016</td>
<td>1,932,255</td>
<td>1,918,135 (99.3)</td>
<td>61,588 (3.2)</td>
<td>17,390 (0.9)</td>
<td>46,930 (2.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Male</th>
<th>Seventh Graders N (%)</th>
<th>Tenth Graders N (%)</th>
<th>Seventh Graders N (%)</th>
<th>Tenth Graders N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Participants</td>
<td>231,112 (100.0)</td>
<td>267,452 (100.0)</td>
<td>215,197 (100.0)</td>
<td>247,185 (100.0)</td>
</tr>
<tr>
<td>Mood</td>
<td>T score ≥ 65</td>
<td>15,616 (6.8)</td>
<td>19,573 (7.3)</td>
<td>21,221 (9.9)</td>
</tr>
<tr>
<td>Problems subscale score</td>
<td>T score ≥ 70</td>
<td>11,140 (4.8)</td>
<td>14,175 (5.3)</td>
<td>11,621 (5.4)</td>
</tr>
<tr>
<td>Suicide-related subscale score</td>
<td>T score ≥ 70</td>
<td>7,627 (3.3)</td>
<td>8,024 (3.0)</td>
<td>11,405 (5.3)</td>
</tr>
</tbody>
</table>
visit regional hospitals and psychiatric outpatient clinics or specialized institutes outside their schools. In certain regions, because board-certified child and adolescent psychiatrists were not available, the referral was made to those in a distant region or those without experience treating children and adolescents. In addition, some parents of at-risk students rejected the referral because of their stigma toward mental health problems and economic burden. The Mental Health Professionals School Visit Project (2015–2019) was implemented to resolve these problems. During visitations to schools, a mental health professional team consisting of nurses, psychologists, social workers, and psychiatrists evaluated students’ mental health through structured interviews with the students, teachers, and parents. Following team-based case meetings, wherein interventions were determined, the team revisited the schools and informed the relevant parties of each student’s status (ie, his/her symptoms, signs, and outcomes of the suspected diagnosis) and proposed plans (ie, psychoeducation for parents and teachers, information regarding recommended treatments and relevant clinics, hospital, and institutes in the region, etc.). The team also helped with the referral of at-risk students to regional mental health professionals and provided economic support as needed. Students who were referred from schools had emotional problems including depression (26.7%), behavioral problems such as attention-deficit/hyperactivity disorder (ADHD) (23.6%), interpersonal problems (18.1%), and family environmental problems (11.2%). ADHD was the most common provisional diagnosis (30.1%), followed by depression (22.8%).15

**Take Home Summary**

The Korean government recently implemented nationwide policies based on mental health perspectives. 4.8%-5.4% of seventh and tenth graders screened positive for mood symptoms on the AMPQ-III in 2017. Evidence-based programs for depression and suicide prevention in adolescents should be developed.

**References**

13. Depression Clinical Research Center and Yeongdeungpo-gu Mental Health Center. *Program for Improvement*


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Disclosure: Drs. Hwang, J. Kim, Chung, Hong, and B. Kim have reported no biomedical financial interests or potential conflicts of interest.

This article was edited by Jessica Jeffrey, MD, MPH, MBA.
AACAP AWARD SPOTLIGHT
Aviva K. Olsavsky, MD

2011 JUNIOR SCHOLAR AWARD
SUPPORTED BY AACAP’S CAMPAIGN FOR AMERICA’S KIDS
The Junior Scholar Award enabled me to travel to the AACAP meeting as a medical student, participate in instrumental mentoring, and make connections with faculty and peers who I look forward to seeing at every meeting. It was inspiring to see trainee recipients across research developmental trajectories during the awards luncheon.

2014 AACAP ROBINSON-CUNNINGHAM AWARD FOR THE BEST PAPER BY A RESIDENT
Publication Title: Indiscriminate amygdala response to mothers and strangers after early maternal deprivation
Working with Dr. Nim Tottenham on this project as a medical student opened up new ways of thinking both about neural correlates of affiliative processes and motivated maternal behaviors, including the impact of these factors on the early lives of children. Further, I began to consider how attachment processes play an important role across the lifespan, and how these phenomena may impact adult mental health.

2016 AACAP EDUCATIONAL OUTREACH PROGRAM (EOP) FOR CHILD AND ADOLESCENT PSYCHIATRY RESIDENTS
SUPPORTED BY AACAP’S LIFE MEMBERS FUND
The Life Members EOP enabled me to network with both junior trainee peers as well as accomplished faculty with longstanding AACAP membership. It was meaningful to participate in the Life Members reception and dinner and to see how a career in child and adolescent psychiatry can be meaningful throughout multiple stages of career development.

2018 AACAP PILOT RESEARCH AWARD FOR JUNIOR FACULTY AND CHILD & ADOLESCENT PSYCHIATRY FELLOWS
Project Title: Maternal Childhood Maltreatment Exposure and Association With Salience of Infant Cues and Motivated Maternal Approach Behaviors
Through the AACAP Pilot Award, I was involved in a research project from beginning to end—from design and conception to dissemination of results—for the first time. This project has been critical for me in the drafting of an NIH career development award application. It provided the opportunity to continue working with my mentors, Drs. Pilyoung Kim and Joan Luby, who have provided considerable expertise on designing a research career that has a positive impact on prevention and treatment in early life.

MENTORING FUTURE PHYSICIANS
Navigating being the first woman to attend college and the first person in my family to become a doctor has been an important aspect of my development as a physician. To trainees from a similar background, know that even when things are difficult, it is still possible to pursue a career in academics. I am always happy to share my experience and advice with any AACAP trainee.

ABOUT DR. OLSAVSKY
JOINED AACAP: SEPTEMBER 2010
WORKS AT: UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CENTER/CHILDREN’S HOSPITAL COLORADO
POSITION: SENIOR INSTRUCTOR, DEPARTMENT OF PSYCHIATRY
INTERESTS: EARLY CHILDHOOD ADVERSITY; PERINATAL PSYCHIATRY; MATERNAL PROCESSING OF INFANT CUES
MENTORING: AACAP ANNUAL MEETING MENTORSHIP EVENTS

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Factors Affecting Use of Electroconvulsive Therapy in Adolescents in Texas and the US

Naveed Ahmad, MD, Omar F. Pinjari, MD, Luis A. Fernandez, MD, Elizabeth Newlin, MD, Salih Selek, MD

Since 1938, electroconvulsive therapy (ECT) has been widely used in the treatment of catatonia, treatment-resistant depression, and severe mania. According to the American Academy of Child and Adolescent Psychiatry (AACAP), criteria for its use in youth is: 1) Presence of severe major depression or mania, schizoaffective disorder, schizophrenia, catatonia, and neuroleptic malignant syndrome. 2) Presence of severe, persistent, and disabling symptoms, such as refusal to eat or drink, severe suicidal ideation, uncontrollable mania, and psychosis. 3) Failure to respond to two adequate trials of medications. 4) ECT can also be used earlier when adequate medication trials cannot be administered because of failure to tolerate pharmacological treatment, or if the patient is incapacitated to the point that he/she is unable to take medication or awaiting a response to a medication poses a grave threat to life.

Worldwide, about one million patients are estimated to receive ECT annually. The prevalence of ECT use varies across countries for a number of reasons, which include the availability of trained physicians, facilities, equipment, and technique of the procedure (unilateral vs. bilateral application of ECT electrodes). For example, for all ages of in-patient psychiatry in Thailand, its use is .01%, in Hong Kong 1.8%, and India 13.4%. In the Chinese adolescent population between 2007 and 2013, ECT has been reportedly used in 46.5% of youth with a diagnosis of schizophrenia, 41.8% of youth with major depressive disorder, and 57.8% of youth bipolar disorders.

In the United States, the utilization rate of ECT for adolescents is 1.5%. Key factors responsible for this low rate may be negative stigma in the media, access to the service, and statewide legislation. Many places lack access to provide ECT services, without the presence of an academic medical center, availability of the equipment, and training or supervision. The negative portrayal of ECT in the media can influence physician’s attitudes and knowledge of the procedure, decrease referrals for ECT, and decrease reimbursements from insurance.

This negative portrayal may have something to do with the side effects of ECT. Some of those who advocate for limiting its use highlight the potential cognitive side effects seen after ECT. In 1974, government economist Marilyn Rice described cognitive decline following ECT to author Berton Roueche, which he reported in his article “As Empty as Eve”. This description contributed to the negative public perception of ECT. Similarly, in 1990, Linda Andre wrote her experience of memory loss following ECT in horrific terms. However, the risks of cognitive effects are also present in some surgical interventions, like a coronary artery bypass grafting (CABG), but no surgical procedure is regulated by any court of law and/or consensus opinion sought. Similarly, cognitive decline seen in children after brain tumor surgery also does not need any consensus from different surgeons or require court order.

State laws put barriers in place that significantly limit ECT access and use. Some states have more general restrictions to ECT, including reporting ECT data to certain state agencies and acquiring mandatory consensus opinion amongst psychiatrists. Other legal requirements make the process more difficult for individual patients, such as requiring a court order or putting age limits for when patients can receive ECT, even if clinically indicated. With a few exceptions, such as Arizona, West Virginia, Maryland, and New Mexico, most states have specific regulations. Please see Table 1 for details of different state laws for ECT. The impact of these laws can be seen in case reports and data showing decreased access and negative patient impact.
The data from 2010 to 2016 ECT reports in Texas shows a significant difference among age groups of ECT use, with only 29 patients (0.17%) being adolescents. We found out that ECT use dropped in California after 1977 legislation.9,10 There was also a 50% drop in Massachusetts from 1974 to 1980 because of state legislation.10 A case study revealed that a 15-year-old boy failed to receive ECT when he moved from Michigan to Texas9 as ECT cannot be given to those below 16 in Texas.

In order to address these varied legal and social practices, we need to advocate for effective and safe usage of this treatment by providing a clear rationale for it. AACAP has established practice parameters to address how and when ECT should be used. Informed consent, a second opinion for consensus, and continuation of concurrent treatment are recommended.1 In order to increase the number of trained professionals, ECT training should be a part of psychiatry residency programs. In a survey12 conducted on 44 residents from the Philadelphia area, residents were given a questionnaire to check their knowledge and comfort regarding the use of ECT. Only 2 residents (7%) indicated confidence in performing the ECT on their own without any supervision. In 2001, the American Psychiatric Association Task Force on ECT recommended13 that residents should receive at least 4 hours of didactic lectures, ECT participation in at least 10 treatments, and assist in the care of at least three patients receiving ECT. In another survey,12 program directors were emailed a questionnaire regarding training in ECT. Seventy-five

### Table 1. State Laws Regarding Electroconvulsive Therapy (ECT)

<table>
<thead>
<tr>
<th>States</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>Minimum age: 16 years</td>
</tr>
<tr>
<td>Alabama, Alaska, Arizona, Connecticut, Montana, Nebraska, Nevada, Oklahoma, Oregon, Pennsylvania, Rhode Island, Vermont</td>
<td>No restriction on age limit</td>
</tr>
<tr>
<td>Texas</td>
<td>16-17 years only</td>
</tr>
<tr>
<td></td>
<td>Registration of equipment and facility with a special consent form required for ECT administration</td>
</tr>
<tr>
<td>California</td>
<td>No less than 12 years old</td>
</tr>
<tr>
<td></td>
<td>Consent of 3 psychiatrists needed for 12-16 years</td>
</tr>
<tr>
<td>Idaho</td>
<td>Court order needed for ECT administration</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Consent of 2 psychiatrists needed</td>
</tr>
</tbody>
</table>

Cohen et al., Taieb et al. and Ghaziuddin et al. found no difference in social interaction skills of ECT pediatric patients as compared to their non-ECT counterparts.11 In our case above, when a youth moved from Michigan to Texas and no longer was allowed to receive ECT, the failure to continue an effective treatment is a form of harm.

**Equal distribution of mental health resources:** This applies to availability of trained ECT professionals, including psychiatrists, anesthesiologists, and other associated staff. ECT equipment should also be readily available for use across the country.11

So far, there are no reported pediatric deaths due to ECT. Fear of impacting neural connections in a young brain is also unfounded. Studies such as Cohen et al., Taieb et al. and Ghaziuddin et al. found no difference in social interaction skills of ECT pediatric patients as compared to their non-ECT counterparts.11 In our case above, when a youth moved from Michigan to Texas and no longer was allowed to receive ECT, the failure to continue an effective treatment is a form of harm.

**Best interests and doing no harm:** ECT provides evidence that it improves some patients well-being.11
percent of program directors reported that some clinical exposure to the ECT was required, while 37% estimated that the typical resident participate in fewer than 10 treatments, and 27% responded that their residents take care in fewer than 5 patients receiving ECT. In yet another survey conducted in Canada, only half of the residents said that they received more than 2 hours of didactic training on ECT. It is imperative that those residents who want to become ECT practitioners should undergo a more dedicated and specialized training during the residency. Didactic teaching should be enhanced with more hands-on exposure to ECT, and those who are in their 4th year of residency especially need to be checked for the ECT skills. There’s also a need for making use of technology like video tapes and an outside speaker to fully train the graduating residents. There are reports that if residents are trained through video tapes, it has a positive outcome on the ECT administration.

Clarity of indications for treatment:
Evidence supports the use of ECT for catatonia, significant self-injurious behavior, and treatment resistant depression. ECT is indicated in catatonia in children. Although rare, the severity of catatonia warrants early diagnosis and treatment. Patients have severe difficulty in carrying out activities of daily life like washing, dressing, and eating or drinking. It is more common in children with autism spectrum disorders. Consoli et al. reviewed 59 cases from 1985 to 2009 and found ECT to be as effective as a second line agent after benzodiazepines. Favorable response was achieved in 45 cases, while 3 had partial recovery followed by 1 non-responder. One case study published by Wachtel et al. described an eight-year boy with severe self-injurious behavior who slapped his head and banged his head against his knees at least 109 times per hour. Several medications like haloperidol, quetiapine, and clozapine were tried with little or no success. However, 15 bilateral ECT treatments improved the symptoms drastically with self-injurious behavior reduced to 19 times per hour. Regarding treatment resistant depression, Ghaziuddin et al. evaluated the effectiveness of ECT. Eleven hospitalized adolescents (ages 16.3 ± 1.7 years, 10 females) who had failed to respond to three or more adequate trials of antidepressant medication were examined. After a thorough diagnostic evaluation, ECT was administered to all 11 patients. They showed significant improvement noted in scores on the Children Depression Rating Scale-Revised (CDRS-R) and the Global Assessment of Functioning Scale (GAF) ($p < .05$).

In conclusion, multiple factors may contribute to underutilization of ECT in adolescents in the US. Psychiatrists should know ECT laws in their respective states and refer patients as clinically indicated. In order to continue to increase access to ECT, it is encouraged psychiatrists and psychiatry residents utilize the 3 bullet points above. Psychiatrists need to gain clinical knowledge and skills through the expansion ECT training in residency. Changing public perception and regulations regarding ECT by using evidence showing safety and best practice parameters to combat the false media representation. Advocacy should be done to address the concerns of lawmakers and help them create effective, useful, and safe regulations that do not prohibit its use when clinically indicated. This work may help increase the use of ECT and benefit those suffering from debilitating and incapacitating mental illness.

**Take Home Summary**
Evidence has shown effectiveness of electroconvulsive therapy (ECT) in treating childhood and adolescents’ psychiatric disorders. However, it is underutilized in the US due to strict state laws, negative portrayal in media, decreased availability of equipment, and lack of ECT-trained psychiatrists.
References


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Disclosure: Drs. Ahmad, Pinjari, Fernandez, Newlin, and Selek have reported no biomedical financial interests or potential conflicts of interest.

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Stress and Inflammation: New Perspectives on Major Depressive Disorder

Rebecca Kass, BS, and Kristopher Kaliebe, MD

Objective: The purpose of this review is to provide an integrated account of how life stress affects inflammation in the body, how the dysregulation of immune pathways is linked with depression and other chronic diseases, and which stress reduction techniques are applicable to specifically reverse these factors contributing to disease development. Stressors in the modern environment will be defined as they relate to the immune system and major depressive disorder (MDD) development. The inflammatory theory of depression will also be examined as it relates to these stressors. Lastly, research on the efficacy of various stress reduction techniques will be discussed, including specifically how they may be used to counter the inflammatory instigators of MDD. In this manner, this review will provide a cumulative roadmap for providers and patients alike to trace the development of MDD and further avenues for treatment of this complex disease.

Depression is a multifaceted disease associated with significant morbidity and mortality. In recent years, increasing attention has focused on the role of the immune system in disease development. An expanding body of evidence demonstrates that patients with MDD have, on average, increased activity of the inflammatory system. Further, evidence implicates inflammation as a fundamental neurobiological alteration in MDD. Targeting this system may thus provide beneficial effect on illness trajectory.

However, not all patients who are depressed have increased inflammation, and it remains to be determined whether the inflammation is a cause or effect of the depression phenotype. Regardless of the direction of causality, depression severity is positively correlated with a pro-inflammatory balance in the body (higher ratio of pro- versus anti-inflammatory cytokines). Given that traditional depression therapies only achieve remission about 37% of the time, reexamination of the therapeutic targets for depression is indicated. In this paper we will discuss the current theories of depression pathophysiology and the modern societal exposures which may contribute to MDD.

Method: A literature review was conducted in order to identify relevant studies on depression etiology and specific stressors of the modern world. Search strategies with specific search terms for each dimension were defined and the following databases were used for each dimension: PubMed, JSTOR, and Google Scholar. These initial database results were then expanded by analyzing the references of the most relevant articles for further results. The initial database search was conducted by selecting the top 10 search returns for each search criteria and analyzing the results of these studies. In this way the information was not selectively filtered based on findings, and the possibility of discarding potentially relevant reports was minimized. A total of 160 references were analyzed. Nine were included in the present review. References were included if they mentioned inflammatory states or markers in relation to the specified dimension of stress. There was no restriction on language.

Modern Stressors

The human body is designed to react to physical threats in the environment by upregulating the sympathetic nervous system and disrupting the immune response. This has far-reaching effects on virtually every organ system in the body. Urban society has largely overcome typical inflammatory triggers such as microbial infection and predators, but we are still wired to react to threat without much consideration as to cause. The typical “causes” of stress have thus been replaced by modern stressors that accompany urbanization, including dissolution of family structure, social
Stress and Inflammation

alienation, pollution, processed foods, traffic, finances, sleep disturbance and more, some of which are associated with systemic inflammation. These stressors are represented by the pro-inflammatory response they cause, marked by cytokines interleukin 1 and 6 (IL-1 and IL-6) and tumor necrosis factor (TNF-α), transcription factors like NF-κβ, acute phase proteins like C-reactive protein (CRP), and the chronic stress marker cortisol—all of which have been observed to be elevated in depressed patients.

Social Determinants of Health

Adverse events occurring in utero and early childhood such as inadequate nutrition, low socioeconomic status, unsafe housing and fragmented family structure have been consistently related to an exaggerated stress response later in life, and higher lifetime rates of depression, as well as diabetes, cardiovascular disease, cancer and liver disease. These same early life stressors predict elevated levels of inflammation later in life. Psychosocial stress, or even the mere perception of it, affects brain chemistry and mood on a biological level, regulating molecular processes that set the stage for MDD and other non-communicable, chronic diseases later in life. Identifying at-risk youth early to address pathologic response patterns with appropriate early intervention may decrease propagation of the inflammatory response and worsening of depressive symptoms later in life.

Obesity and the Sedentary Lifestyle

Adipocytes are known to release pro-inflammatory cytokines (adipokines) and chemotactic factors which play a role in the overweight, low-level inflammatory state. Conversely, serum CRP levels are inversely related to intake of fruits and vegetables, which is thought to be due to the anti-inflammatory effects of the flavonoids they contain. A number of dietary intervention studies have provided evidence that dietary flavonoids are capable of modulating inflammatory cytokines and CRP production, which may explain the results of prospective cohort data suggesting that increased fruit and vegetable intake was associated with improved cognitive function and reduced risk of age-related neurodegeneration. Diet is thus a target in treatment-resistant MDD, particularly when it coexists with obesity. A mental health clinician can offer simple recommendations for body fat reduction and increased consumption of fruits and vegetables.

Sleep Disturbance

Lack of sleep has detrimental effects on the body. In a study examining effects of sleep disturbance on inflammation in mouse models, Zhu and colleagues demonstrate increases in IL-6 and microglial activation in the mouse brain following 24 hours of sleep disruption. Histological results from the study further suggest that neuroinflammation induced by sleep disturbance may contribute impairment in learning and memory and decline in cognitive function. Given that MDD is often accompanied by sleep disturbances, interventions that target improvement in sleep are important.

One practical intervention to address sleep disturbance in children and adolescents involves electronic use. Sleep disturbance is becoming especially relevant for youth using electronic screens just before bed. After-dark exposure to electronic screens is associated with impaired sleep, an observation which is likely compounded by the fact that electronic screens utilize a wavelength of light which the human brain associates with wakefulness. After-dark exposure to this light throws off the circadian rhythm and can disrupt homeostatic processes necessary for health. Because sleep disturbance is correlated with higher levels of circulating pro-inflammatory cytokines as well as increased occurrence and recurrence of depressive symptoms, sleep hygiene is an additional therapeutic target when pharmacologic treatment of MDD proves inadequate.

Stress, Inflammation, and Depression

Implications for Mood. There is now substantial evidence that psychological stress, a well-known precipitant of mood disorders, can increase inflammatory activity, and the presence of this inflammation may confer risk for MDD development. Depressed patients with increased inflammatory biomarkers are more likely
to be resistant to conventional antidepressant therapy, while inhibition of these markers improves mood as well as treatment response, pointing to the role of inflammation in disease severity.\textsuperscript{15}

The implication of specific immune genes and inflammatory markers in MDD calls for a reexamination of the current treatment model for depression. Instead of directing clinical and research attention on the monoamine system, investigation of possible immune targets is justified. In a narrative review of inflammation and depression by Young et al.\textsuperscript{16} the authors conclude that studies to date have demonstrated mixed results but that further research is warranted.\textsuperscript{15} Research involving the application and monitoring of immune-targeted therapies for appropriate patient populations would be critical in reimagining our approach to MDD management moving forward.\textsuperscript{15}

Final Remarks

Clinicians Need to Counsel Patients About Stress. Reducing stress reduces inflammation, and if MDD is at least in part an inflammatory disease, providers should give weight to this component of disease pathophysiology when counseling patients.

As the number of chronic conditions in society increase, so does the necessity for preventative stress counseling. Stress counseling is rarely offered by physicians—only 3% of primary care visits included this measure on a national study from 2006-2009. And when it is offered, it is often as a response to chronic disease flare-ups.\textsuperscript{17} As more diseases of modernity are shown to have an inflammatory basis, and in light of the fact that stress is shown to promote inflammation, stress reduction seems an almost necessary preventive measure that should be taken by anyone living in modern urban environments. Evidence-based stress reduction techniques are readily available to correct the immune dysregulation which often accompanies MDD, including mindfulness-based stress reduction (MBSR), yoga, nature exposure, and physical exercise. These simple, low cost interventions could help prevent development of chronic diseases like MDD and have beneficial effects on those patients who have already suffered the consequences.

Take Home Summary

Links between stress, inflammation, and depression are emerging such that it may be possible to trace the effects of life stressors on mood. Behavioral modifications of these stressors may offer avenues for or adjuncts to disease treatment and understanding.

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About the Authors

**Rebecca Kass, BS,** is a fourth-year medical student at the University of South Florida, Tampa, who is going into psychiatry. Her research interests include the inflammatory basis of psychiatric disease and the pathophysiology of stress reduction techniques. She is a practicing yoga and meditation instructor in St. Petersburg, FL, and the author of a lifestyle and mental wellness blog for young professionals in her community.

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**Disclosure:** Ms. Kass and Dr. Kaliebe have reported no biomedical financial interests or potential conflicts of interest.

This article was edited by Anne McBride, MD.
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Phenomenology of Sensory Processing Disorder

Clinical interest in abnormal sensory processing has evolved since the mid-twentieth century from initial work by Anna Aryes,\(^1\) a prominent occupational therapist, and Leo Kanner, known to many as the father of autism. Aryes, while observing children with learning disabilities, conceived of a field of sensory integration dysfunction, a disorder related to neurological impairment in “detecting, modulating, discriminating, and responding to sensory information”.\(^1\) There is increasing recognition today that differences in sensory processing are transdiagnostic and encountered by a multitude of clinical practitioners, including psychiatrists, neurologists, occupational therapists, audiologists, and pediatricians, among others. It is thus of vital importance for child psychiatrists to recognize those differences, distinguish them from autism and other diagnostic categories, and conceptualize approaches to treatment.

Sensory Processing Disorder (SPD) describes impaired processing of, responses to, and organization of sensory information with a resulting impairment in social and occupational functions.\(^1\) It is a diagnosis, however, that is not included in either the DSM-5 or International Classification of Diseases, 10th Revision (ICD-10) classification systems. Research into this heterogeneous condition has suggested three subtypes, one of which is Sensory Modulation Disorder (SMD). SMD, referring to an inability to regulate one’s responses in an adaptive manner to sensory stimulation, has three further categories: sensory over-responsive (SOR), sensory under-responsive (SUR), and sensory seeking/craving.\(^1\) A disorder highly related to SOR subtype is misophonia, which is a sound processing disorder characterized by heightened and negative affective responses to specific, everyday sounds.\(^2\) While SOR is only in response to loud or unexpected noises, misophonia describes aversive and angry feelings emoted in response to innocuous sounds, such as chewing, breathing, and pen clicking.

Research on the autonomic nervous system has demonstrated that increased reactivity (sympathetic nervous system) and less vagal variability (parasympathetic nervous system) contribute to a decreased ability to modulate responses to typical environmental stimuli.\(^1\) Also, fMRI research into neural processes underlying SOR and misophonia has demonstrated that connections from the anterior insular cortex to regions responsible for processing and regulating emotions, such as the amygdala and ventromedial prefrontal cortex, display abnormal myelination patterns.\(^2\) Taken together, this combination of increased salience attributed to harmless and irrelevant sounds with atypical interoception, leads to the anger, anxiety, and arousal experienced by individuals with misophonia.\(^2\)

Differentiating Autism Spectrum Disorder and Sensory Processing Disorder

It is well established that there is a high incidence of sensory reactivity abnormalities in individuals with autism spectrum disorder (ASD), ranging from 33 to 96%,\(^3\) while the prevalence of SPD in Typically Developing (TD) children is cited at 5 to 16%.\(^1\) However, it is important to recognize that several other conditions, such as intellectual developmental disorder, attention-deficit/hyperactivity disorder (ADHD) and obsessive-compulsive disorder (OCD), as well as non-psychiatric diagnoses, such as SPD, can have sensory modulation or processing difficulties be prominent.\(^3\) Thus, intolerance
to aversive sounds, visuals, textures, and other sensations does not appear to be a phenomenon unique to ASD or SPD, but instead likely represents an underlying aberration in neural connectivity that is transdiagnostic.

More recently, Tavassoli et al. published the largest study to date comparing children with ASD, SPD, and TD investigating the possibility of differentiating ASD and SPD children based off their sensory symptoms and cognitive styles. Pertaining solely to sensory symptoms, children with ASD scored highest on the SUR subscale, while on the SOR and sensory-seeking subscales, both the ASD and SPD children scored similarly higher compared to the TD children. With regards to cognitive styles, specifically Empathy Quotient (EQ) and Systemizing Quotient (SQ), children with ASD demonstrated lower EQ and higher SQ scores than both the SPD and TD children. Interestingly, children with SPD, who at baseline trended to higher scores (ie, more autistic) on the Autism Spectrum Quotient in this study, trended to lower EQ scores than TD children too. It is postulated that, in children with SPD, their overwhelming SOR symptoms might make it difficult to use empathy skills and respond to the emotions of others.

It is recognized formally in Criterion B of autism spectrum disorder that autistic individuals often have hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment. Ultimately, however, while most children with ASD certainly demonstrate difficulties with sensory modulation similar to those with SPD, and many of the underlying neural features and resulting adaptive behaviors are likely to overlap, children with ASD can be differentiated based on the presence of core ASD features that impair social and emotional functioning.

Evaluation of Sensory Processing Difficulties

Practically, child psychiatrists and other practitioners clinically evaluating sensory processing difficulties are tasked with evaluating and documenting these deficits in an objective manner. Several different measures are used, and are broken down into parent/self-report and clinician observed assessments. Since several of these measures were developed for the autistic population characterized by common language difficulties, parent-report is often the sole way to assess sensory reactivity abnormalities. Such measures include the Short Sensory Profile (SSP), Sensory Experiences Questionnaire (SEQ), and Sensory Processing Measure (SPM). Though no standardized diagnostic criteria for misophonia exist, several scales for assessing it are available, including the Amsterdam-Misophonia-Scale (A-MISO-S).

Of course, parent-report scales have inherent bias with retrospective recollection that can be inaccurate. As a result, some clinician-administered tools exist, including the Sensory Processing Scale Assessment (SPS), Sensory Integration and Praxis Tests (SIPT), and the Sensory Processing Assessment for Young Children (SPA). Tavassoli et al. set out to provide greater objectivity by validating the SPS, which consists of fifteen structured games to establish whether patients display sensory hyperreactivity, sensory hyporeactivity, or sensory seeking behaviors. Tasks include painting the patient’s arm, the “goo game,” among others, that allow the clinician to arrive at a global clinical impression of sensory symptoms. Tavassoli et al. found that when using the SPS, 65% of ASD children demonstrated clinically significant sensory processing difficulties versus just 4% of TD children. Compared to the SSP, the SPS was more specific, and item-reduction analysis found 5 critical items on the SPS. It is likely that using the parent- and clinician-administered measures in tandem would yield the most specific and clinically meaningful assessments in clinical practice.

Approach to Treatment of Sensory Processing Difficulties

In general, targeting the abnormal behaviors associated with sensory processing disorders is the main goal of treatment, and much of the research into treating these disorders has been done in the autistic population with comorbid sensory processing impairments. Necessarily, helping the individual achieve more adaptive emotional responses to sensory stimuli is an individualized process, and most of the current research focuses
on behavioral therapies. Schaaf et al. performed a randomized clinical trial on children with sensory integration difficulties, comparing Sensory Integration Therapy (SIT) to Usual Care. During the ten-week SIT, therapists used individualized assessment of maladaptive behaviors, creating a hypothesis of the sensory integration difficulties purportedly causing them, and enhanced the child’s ability to utilize sensory-motor experiences in adaptive ways. For example, for a child with an aversion to touching his food, the therapist’s goal might be to decrease tactile sensitivity and enable the child to eat with a fork and spoon for 50% of the meal as appropriate. As measured on the Goal Attainment Scaling, which measures functional outcomes as chosen by parents, those with SIT demonstrated significantly greater improvement with a large effect size of 1.2. The authors concluded that, as a child’s ability to modulate sensation improved, so too did their behavioral regulation and ability to interact in self-care and social activities.

More recent literature in treating sensory processing disorders in individuals without autism has focused on treating misophonia. For example, Schroeder et al. assessed the efficacy of a modified cognitive-behavioral therapy (CBT) in improving misophonic emotions in individuals with misophonia and without other psychopathology. The treatment protocol targeted the hyper-focus on human sounds with resulting negative affective reaction by utilizing task concentration exercises, counterconditioning, stimulus manipulation, and relaxation. A majority of the individuals (58%) demonstrated improvement.

Finally, no standardized trials exist to date of non-behavioral treatments of SPD. There is some speculation that, since misophonia and sensory processing difficulties may share neurocircuitry with OCD and Tourette’s syndrome, serotonergic medications such as clomipramine could theoretically reduce the negative emotional and physical sensations associated with SPD. Alternatively, one could envision using repetitive transcranial magnetic stimulation (rTMS) to augment response to SIT or other behavioral-based therapies.

Conclusion
Sensory processing difficulties, though not unique to ASD, are highly prevalent in this population. Atypical sensory reactivity can take many forms, including sensory hyporesponsiveness, sensory hyperresponsiveness, and sensory seeking behavior. Understanding of these difficulties has been slightly hampered by a lack of a unified classification system. There is solid evidence, however, that there are sympathetic and parasympathetic impairments, as well as fMRI evidence of altered activation responses in various neural networks. The clinical evaluation of these individuals with atypical sensory reactivity requires a thorough evaluation for autism, as well as characterization of sensory impairment via parent-reported and ideally clinician-administered assessments. Current research indicates that the most effective treatments are sensory integration therapies that individualize adaptive responses to sensory experiences.

Take Home Summary
Sensory processing difficulties are highly prevalent in children with ASD, though can occur in TD children too. It is important for child psychiatrists to understand the neural and etiological bases for atypical sensory reactivity and its variants; to evaluate it and other psychiatric comorbidities; and to help formulate a multi-modal treatment plan.

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Abnormal Sensory Reactivity in the Child and Adolescent Psychiatry Clinic

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We Are on the Same Team: Child Psychiatry and the School System

Kristen Durbin, MD, and Sara Harmon, MD

As former public school teachers now in child psychiatry training and practice, we continue to be struck by the disconnect between the K-12 education system and psychiatric care. As teachers, we often felt unsupported by the medical community, and now as physicians we struggle to negotiate appropriate roles as collaborators with schools. Constraints on funding, time, and privacy often limit the expansion of mental health competency training for teachers and clinical services in schools. Under-resourced communities are particularly vulnerable to these barriers to mental health care. As local experts, psychiatrists can partner with schools to improve teacher competence and strengthen referral networks.

Roughly 13% of children and adolescents ages 8 to 15 are diagnosed with DSM-defined disorders, yet only about half of those youth receive formal care for those disorders.¹⁻³ This prevalence essentially guarantees teachers will be responsible for educating students with mental health needs regularly throughout their careers. Teachers are frontline observers to the impact of psychopathology in their students, such as the stigmata of autism spectrum disorder or attention-deficit/hyperactivity disorder (ADHD), that may make classroom integration and engagement difficult for some children.

Teachers in high demand communities interact with a particularly vulnerable student population. Across the United States, many school-age students cope with social, emotional, and behavioral needs, often related to traumatic life experiences or adverse childhood events (ACEs), that impact their function in the school setting.⁴,⁵ As teachers, we saw students act out in class, talk out of turn, fend off school-day sleepiness, and struggle to focus on learning tasks in response to a variety of significant life stressors, including the incarceration of family members, the deportation of parents, or living in foster or kinship care. Family and neighborhood violence prompted hypervigilance in some students.

Classroom teachers generally recognize that students’ emotional and behavioral challenges—whether related to trauma, undiagnosed mental illness or other etiologies—can lead to dysregulation or disengagement during classroom activities. Despite this awareness, teachers report feeling largely unprepared to handle these situations effectively and compassionately, as their formal education and professional development focuses primarily on academic instruction and achievement.¹ A 2018 study of more than 18,000 elementary teachers in the Journal of School Health notes that teachers recognize their lack of preparedness and self-efficacy in identifying mental health issues among students, citing the lack of training as a detriment to their teaching efficacy.¹ Furthermore, a 2019 study evaluating local and state-level teacher training standards found mostly general “mentions of mental health, specific mental health conditions … and teacher collaboration related to student mental health needs” within these standards rather than specific objectives for facilitating teachers’ ability to engage in direct mental health recognition and intervention with students.⁶ In response to this policy oversight, the call to implement mental health training for teachers on a broader level has started to gain momentum around the world, as evidenced by studies documenting improvements in teacher mental health literacy as a result of teacher training interventions in Canada, Pakistan, and Tanzania.⁷,⁸

Teachers as Gatekeepers

To target the gap in educator mental health training in the US, a group of clinical psychologists and social behavioral scientists propose training teachers via interactive educational modules as youth mental health
“gatekeepers,” who can recognize signs of psychological distress in the classroom and communicate their observations with parents and administrators to better support students’ needs. In this study, “positive gatekeeping behaviors” stemmed from the initial recognition by teachers of behavior, negative academic performance changes, or physical appearance as signs of psychological distress among students. Following such recognition, teachers discussed these signs of psychological distress with students and their parents by applying motivational interviewing strategies into direct conversations. Teachers also engaged in motivating parents to seek help for their children when appropriate by informing them about mental health resources. The study also evaluated teachers’ self-reported preparedness and efficacy in practicing these gatekeeping behaviors. Participating teachers completed an interactive educational module applying motivational interviewing techniques to simulated conversations with parents and school administrators with the goal of connecting a student with mental health care. Notably, teachers completed the online module independently to avoid potential peer stigmatization for using “critical, judgmental, or labeling” language in a given simulated situation. This intervention improved self-reported teacher preparedness, likelihood, and self-efficacy to perform gatekeeping behaviors and was the first study to evaluate the impact of training elementary teachers as mental health gatekeepers. Practical applications of similar interventions could be facilitated on the school or district level by interdisciplinary teams of child psychiatrists, school psychologists and therapists to foster collaboration between educators and mental health professionals.

Although the concept of gatekeeper training offers one potential venue for improving collaboration between the education and mental health systems, barriers to its implementation include availability of mental health professionals to provide teacher training, lack of school financial resources to pay for educators and materials, and limited professional development time allotted to teachers for such training. Unfortunately, gatekeeper training does not adequately address the ongoing needs of teachers and their students once a mental health concern has been identified in the classroom. Many students, even if appropriately identified and referred outside the school system, will continue to experience challenging behaviors or psychological distress that may indicate the need for a higher level of support outside the walls of the school.

**Child Psychiatrists Partnering With Teachers**

Another means of connecting the worlds of education and psychiatry is the integration of psychiatric services into the school setting, whether via campus-based professionals, telepsychiatry, or direct teacher-physician communication systems. Currently, while 89% of US public school districts employ counseling, psychological, or social services staff at the district level, only 25% of schools directly employ them on campus. This means that the majority of schools in each district lack employed mental health support. Given this shortage of campus-based psychiatrists and mental health clinicians, telepsychiatry holds promise for school mental health integration in both rural and urban settings. A 2019 study of an urban school-based telepsychiatry program versus in-person, school-based psychiatric services found that patient, caregiver, and provider satisfaction with telepsychiatry was similar to that of in-person psychiatric care. Additionally, telepsychiatry was perceived by patient and provider as more efficient than in-person treatment. Psychiatrists surveyed in this study felt their reach to schools and children was broadened by engaging in telepsychiatry and they appreciated the flexibility of telepsychiatry to facilitate timely appointments, manage cancellations, and minimize travel time to schools. Another potential venue for teacher-doctor collaboration is the development of tech-based systems that convey relevant health information between educators and electronic health records (EHR). Researchers at the Children’s Hospital of Philadelphia (CHOP) developed an effective email-based software to collect ADHD information from parents and teachers that delivered data directly to clinicians within the EHR. This intervention improved open sharing of information
between involved parties regarding children’s ADHD symptoms and overall functioning.\textsuperscript{11}

Barriers to integrated school services are similar to those limiting access to child psychiatry services at large. The ongoing national shortage of child psychiatrists and therapists makes it difficult to find providers to staff integrated programs for both in-person and telepsychiatry services.\textsuperscript{12} Additionally, privacy laws that govern school settings and educational information (Family Educational Rights and Privacy Act, [FERPA]) are different from those that govern medical settings and protected health information (Health Insurance Portability and Accountability Act, [HIPAA]), making integrated programs difficult to set up from a systems standpoint. Even if families provide dual consent for release of information between schools and mental health providers under HIPAA and FERPA (as was done in the CHOP EHR-school communication tool study), large-scale collaboration between the educational and mental health systems may only be possible if elements of HIPAA and FERPA are legally revised to facilitate easier sharing of health care records and educational records without compromising patient and student privacy.\textsuperscript{11,13} The interface of these two legal frameworks has produced communication barriers at the K-12 and higher education levels and remains an ongoing challenge for educators, administrators and health care professionals.

The Future of School Mental Health

Child psychiatrists can leverage their expertise to create change in school mental health in a variety of collaborative, innovative ways: they can lead educator mental health literacy workshops at the local school or district level, consult with state officials to create policies and standards for schools and teachers that directly define mental health competencies in teacher training, create educational modules to build teachers’ knowledge of common psychopathology, or work with schools to create, implement, and facilitate mental health protocols for recognition, referral, and treatment. One promising recent model for psychiatry-school collaboration integrated elementary school-based psychiatry consultation services with dedicated mental health professional development sessions for teachers facilitated by child psychiatry fellows. This partnership addressed teachers’ need for both mental health training and space for facilitated emotional processing while providing child psychiatry fellows with valuable school consultation experience.\textsuperscript{14} Though this collaboration was ambitious in its goals and scope, its reported positive impact on teachers, and psychiatrists suggests it could be replicated elsewhere with commitment from all involved parties. If working at a population level with schools and school systems is not feasible, acting on the individual patient level by obtaining a HIPAA release from a parent, writing a note or making a call to a patient’s teacher could improve regular collaboration between educators and mental health professionals.

In terms of teacher-facing interventions, professional education standards and training for educators should be modified to include mental health competencies with the goal of empowering teachers to identify mental health needs among students from the first sign of psychological distress in the classroom. Education around developmentally appropriate expectations for student behavior may help teachers differentiate between appropriately functioning students and those whose school performance may be impaired by underlying mental illness, trauma, or adverse childhood experiences. In turn, teachers should feel comfortable navigating conversations with families and colleagues about student mental health and its relationship to academic success. In our own teaching experience, learning the basics of identifying, screening, and referring patients with mental health concerns would have made us more effective educators. We now feel responsible as child psychiatrists to do our part to equip our teacher colleagues with the knowledge and skills to act as effective mental health advocates for their students. We must recognize that failing to leverage the daily contact and longitudinal relationships teachers build with students means missed opportunities to identify children with emotional and behavioral needs and connect them with appropriate support and resources. Though progress
on the school mental health front warrants significant buy-in from all involved parties, child psychiatrists are well positioned to make the case for collaboration and innovation across systems to support the success of all children.

**Take Home Summary**

Teachers frequently encounter mental health concerns in schools. Barriers to student mental health include inadequate teacher training, limited access to services, and privacy legislation. Child psychiatrists can empower teachers as “gatekeepers,” expand campus-based and telepsychiatry services, and communicate with school systems.

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Welcome to our new column, *Connect Corner*—an opportunity to critique books, shows, movies, video games, and any other relevant media content from the perspective of a child and adolescent psychiatrist. To kick off this column we begin with a more traditional form of content: books. When the JAACAP Connect Editorial Board met this past October at the AACAP’s 66th Annual Meeting in Chicago, IL, we started our gathering by sharing a favorite children’s book. We reflected on the stories that touched us as children and the ones we have discovered as parents.

The story of *Cinderella* was a favorite of mine as a child. I could read it to myself and I went back to it often. At some point I lost interest, ready to move on to chapter books. My copy was packed away in a box of things I had outgrown, waiting for a time they might be useful again. I didn’t give the story much thought until 25 years later when that box was opened to see if anything in it might be wanted by my young daughter. She was curious about my *Cinderella* book, so we pulled out my well-worn copy and I started reading. When I got to the part where the prince falls in love immediately due to Cinderella’s beauty, I paused. Through my adult lens of experience the story felt very different. It seemed like Cinderella’s value was determined by how beautiful she was, and the message of overcoming hardship (her difficult life) by letting someone else (her fairy godmother) make her beautiful so that a man (the prince) could fix her life was hardly a lesson I was eager to impart to my young daughter. As a result, like any good editor, I did some creative editing since my daughter couldn’t read and I could change the words to whatever I wanted. In our version the prince is captivated by Cinderella’s good ideas and at the end they go to college.

Perhaps it’s not fair to review *Cinderella* with our modern perspective, but as a parent I find myself thinking very much about the books I guide my children towards. Especially since, as any parent knows, you may well end up reading a book over and over and over. The beautiful story, *Rosie Revere, Engineer* by Andrea Beaty, illustrated by David Roberts, is a book I discovered a few years ago. Written in rhyming verse filled with rich vocabulary and entertaining alliteration, it is a joy to read out loud. The delightful prose is matched by the intricate and playful illustrations that fill each page. And unlike *Cinderella*, the lessons are powerful and inspiring. Rosie is driven to create and build, applauded by her family, but when she encounters a setback she retreats. Rosie eventually decides to take a risk and try again, only to feel like she has failed again. It is in this moment of perceived failure that Rosie’s great-great-aunt Rose delivers her lesson: “the only true failure can come if you quit”. It is a message that resonates well and one I know all children must understand to grow and thrive. The challenge of working through difficulty, through perceived failure, is one that all of the families I work with face. And it is those children who find a way to persist who will develop the grit to be successful in the path they choose.

There is another component of *Rosie Revere* that stands out because of what is noticeably absent. There is no discussion of girls being discouraged to pursue math and science. Rosie is just another child fascinated by the world and eager to explore engineering. There are no qualifiers like, “even though she is a girl,” or “despite others saying engineering is easier for boys.” Many stories contain details like this and when I read them to my daughter she is puzzled. It is a stereotype she must understand eventually, but in this story, the fact that Rosie’s interest in engineering is not considered special is an even stronger way to stand up to the bias we know exists. Rosie’s story is about developing grit, not about overcoming sexism to pursue math and science. It is simply implied that to pursue engineering as a girl is a normal thing, another lesson I feel good about sharing.
For more great books check out these favorites from the JAACAP Connect Editorial Board:

Goofy and the Enchanted Castle by Walt Disney Company

A lovely (and fun) story about the importance of friendship, humility, and benevolence aiding oneself and others.

– Chase Samsel, MD

Not a Box by Antoinette Portis

This book really capitalizes on the power of imaginative play and serves as a springboard for all kinds of fun bedtime discussions in our household.

– Misty Richards, MD, MS

I Like Myself! by Karen Beaumont

I started reading it with my daughter and her friends. Great story about appreciating yourself inside and out.

– Nicole Cotton, MD

A Barrel of Laughs, A Vale of Tears by Jules Feiffer

My third-grade teacher read this wonderful tale aloud to our class each day. It was the first book I can recall that transported me to another world as Prince Roger learned to use humor and understand sorrow as his adventure unfolded!

– Adam Sagot, DO

The Runaway Bunny by Margaret Wise Brown

A beautiful book that celebrates the bond between a child and its mother, yet captures an inevitable hint of loss: the child must grow up, grow away, to which the mother, or any parent, can only bravely respond with unfailing devotion. My daughter and I have shared many special moments reading this book together.

– Jessica Jeffrey, MD, MPH, MBA

The Araboolies of Liberty Street by Sam Swope

I read this with my children 15+ years ago. It takes on the challenges we face in embracing diversity.

– Douglas K. Novins, MD

Green Eggs and Ham by Dr. Seuss

I loved the story Green Eggs and Ham as a child and enjoy sharing its message about being curious, adventurous, and open to trying new things with my kids.

– Michael Kelly, MD

The Little Prince by Antoine de Saint-Exupéry

Maybe not a typical children’s book, but there is so much wisdom and heart packed into those pages. This book is great for people who want to remember what it is like to think like a child, and when I was our fellowship director, I used to give a copy to all of our incoming fellows.

– David Rettew, MD

The Phantom Tollbooth by Norton Juster; illustrated by Jules Feiffer

Both as a child and as an adult, I have loved the book’s big messages packed into infinite tiny moments of charm, whimsy, and wit. And Feiffer’s line drawings marry beautifully with the text.

– Oliver Stroeh, MD

The Giving Tree by Shel Silverstein

My favorite children’s story is Shel Silverstein's The Giving Tree, which I’ve always found both sad and beautiful. Rereading the story as a parent has added such depth about unconditional love that I doubt I fully grasped as a child.

– Anne McBride, MD
**Brown Bear, Brown Bear, What Do You See?** by Bill Martin, Jr.

I enjoyed it myself, but also really enjoy reading it to my son with the predictability, bright colors, and fun animals to identify.

– Justin Schreiber, DO

**The Story of Ferdinand** by Munro Leaf

He the lover of flowers. A most peaceful bull.

– Andrés Martin, MD, MPH

**References**


CLiPPs: Inflammation in Children and Adolescents With Neuropsychiatric Disorders


Reviewed by: Nicole A. Mavrides, MD, University of Miami/Jackson Memorial Medical Center, Miami, FL

Background: Inflammation is well established as a factor in the pathogenesis of chronic medical diseases that are highly co-morbid with psychiatric disorders. There is great evidence supporting the link between inflammation and major depressive disorder in adults, and more research is also linking inflammation and MDD and other psychiatric disorders in children. The purpose of the review was to summarize the evidence regarding inflammation and psychiatric disorders in children and adolescents.

Methods: A systematic review of the literature on inflammation, neuropsychiatric disorders in children and adolescents was performed via MEDLINE looking at all studies from 1946 to August 2013. Studies were included if the pro-inflammatory markers (PIMs) in children and or adolescents with neuropsychiatric disorders were measured.

Results: 67 studies, involving 3,952 youth, were included in the final analysis and review, but the MEDLINE search yielded 667 citations. Evidence for the pro-inflammatory state was found to be strongest in autism spectrum disorders (ASD). IFN-γ was elevated or showed a trend toward elevation in many of the studies compared to controls. Some of the other pro-inflammatory markers were inconsistent with some studies show increases and others showing no difference between controls. The data also demonstrated increases in PIMs in children and adolescents with MDD, Bipolar Disorder, PTSD, OCD, Tourette’s Disorder, ADHD, and Schizophrenia. The data was inconsistent across the many studies. The findings in youth with MDD, Bipolar Disorder, and PTSD seem to be similar and equivocal to the adult literature in this area. Specifically, IL-6, IFN-γ, IL-2, CRP, and TNF-α were seen to be elevated in both children and adolescents with the above disorders, but also in first degree relatives of those with the above disorders.

Conclusion/Commentary: There is preliminary evidence for elevated markers of inflammation in children and adolescents with neuropsychiatric disorders, specifically ASD, MDD, Psychotic Disorder, Bipolar Disorder, and PTSD. Pro-inflammatory markers are unlikely to serve as diagnostic biomarkers because of the non-specific nature, but they may serve as essential markers of illness activity and potential treatment response. One other recent study did find that IL-8 was increased in ASD patients, which may demonstrate immune dysfunction in ASD. More research needs to be completed with larger, prospective studies to appreciate the goal of inflammatory markers apprising clinical practice.

Take Away
Inflammation and neuropsychiatric disorders in children and adolescents appear to have a relationship similar to that in adults, with elevated PIMs, but more research needs to be done to truly understand the implication.

This article review originally appeared in the CLiPPs Spring 2016 Edition.

References
CLiPPs: Seropositive vs. Seronegative Autoimmune Panencephalitis


Reviewed by: Emily Katz, MD, Brown University School of Medicine; Hasbro Children’s Hospital, Providence, RI.

Background: There is a growing recognition of autoimmune encephalitis such as anti-NMDA receptor encephalitis as a cause of psychiatric symptoms and altered mental status in children. Some patients may present with signs and symptoms suggestive of an autoimmune process but do not test positive for known autoantibodies. The objective of this study was to describe the clinical features of children with suspected autoimmune encephalitis and compare findings and outcomes of patients with and without identified CNS autoantibodies. Some authors refer to this latter entity as SNAPE (seronegative autoimmune encephalitis).

Methods: Serum samples of 111 children presenting with encephalopathy plus neuropsychiatric symptoms, seizures, movement disorders and/or cognitive dysfunction seen at 5 tertiary referral centers in the UK with encephalopathy were sent to the Oxford lab for CNS autoantibody testing. A blinded clinical review panel identified 48 probable cases of autoimmune encephalitis. Clinical data including demographic information, features of presentation, imaging and other laboratory testing results, response to immunotherapy and other outcomes were compiled, with reviewers blinded to autoantibody testing results.

Results: Serum antibodies were detected in 44% of the patients with probable autoimmune encephalitis. Patients ranged between just under 2 to 18 years of age. Antibody negative patients were clinically similar to those with identified auto-antibodies and had similar response to immunotherapy. Seizures (86%) and behavioral changes (63%) were the most common associated clinical findings. EEGs were abnormal in 70% of patients. 52% of patients receiving immunotherapy experienced a complete recovery, as opposed to 28% of untreated patients.

Conclusion/Commentary: Patients with probable autoimmune encephalitis share clinical features regardless of presence of detected autoantibodies. Treatment response to immunotherapy was generally positive, with 94% of treated patients classified having some response and 58% experiencing a full recovery. These data suggest that an autoimmune work-up should be strongly considered for patients who present with encephalopathy and at least one of the following features: neuropsychiatric symptoms, seizures, movement disorders, or cognitive dysfunction.

Take Away
SNAPE happens. If autoimmune encephalitis is strongly suspected, clinicians should consider immunotherapy even in cases where tests for known autoantibodies are negative.

This article review originally appeared in the CLiPPs Summer 2016 Edition.

Additional resources related to this CLiPP:
CLiPPs: Psychiatric Boarding in the Pediatric Inpatient Medical Setting: A Retrospective Analysis


Reviewed by: Yasas Tanguturi, MD, MPH, Vanderbilt University Medical Center

**Background:** The number of pediatric patients presenting to emergency rooms for acute psychiatric concerns has increased, but the number of available inpatient psychiatric beds has decreased. This has led to the problem of ‘Psychiatric Boarding’, where patients are admitted either to an emergency room or to an inpatient pediatric service awaiting psychiatric placement.¹ The Joint Commission recommends that boarding not exceed 4 hours. There are various problems associated with boarding including delayed care, negative outcomes for patients, families and the hospital system, along with financial losses.² The literature has identified that patients who are more psychiatrically acute or clinically severe tend to have longer wait times before placement (a so called ‘reverse triage’ effect).³,⁴ This paper explores the increase in volume of psychiatric boarders in a pediatric inpatient unit from 2011 to 2013 and describes the characteristics of those boarding in 2013 along with outcomes and interventions delivered.

**Methods:** This is a retrospective chart review of boarders admitted to the pediatric unit at Boston Children’s Hospital in the year 2013. All boarders on the unit were followed by the psychiatry consult service. Patients were assessed using the CGAS (Clinical Global Assessment Scale) upon admission; they were also assessed daily using the CGI-S and CGI-I (Clinical Global Impression Scale - Severity and Improvement).

**Results:** There was an almost 50% increase in boarders from 2011 (n=241) to 2013 (n=437). Out of 437 charts reviewed for the year 2013, the most common presenting complaint was suicidal attempt, followed by aggressive behavior and suicidal ideation. Mean CGAS scores indicated a high clinical severity for the population (risk of self-harm/impaired functioning). More than 70% had 2 or more psychiatric diagnoses, 66% had previous psychotropic medication treatment and nearly 40% had previous psychiatric admissions. Average length of boarding was 3.11 days. CGI scores demonstrated a significant improvement from admission to discharge. This was even more pronounced in the small percentage of kids who boarded for longer than 5 days. Around 23% of boarders were discharged to lower levels of care (partial hospitalization programs or outpatient treatment). A majority of the boarders received interventions such as psycho education (91%) and individual psychotherapy (87%).

**Conclusion/Commentary:** Findings highlight the clinical severity of boarding patients, consistent with previous literature on the subject. This paper demonstrates a role for the delivery of interventions associated with improvement during the boarding period. In contrast to previous studies,³ the team was able to spend one hour per day on average with the boarders and deliver psychosocial supports including psychotherapy. This led to the development of a new service model which included addition of new social workers, psychiatric nurses for behavioral interventions and new standardized protocol. This study also demonstrates a useful way of clinical monitoring of kids while boarding that need to be further validated.

**Take Away**

There has been an increase in psychiatric boarding in pediatric inpatient units. The time period of boarding allows for the delivery of interventions to help with stabilization and treatment. Enhanced program interventions could help with faster stabilization and discharge to lower levels of care.

This article review originally appeared in the CLiPPs Spring 2019 Edition.
**References**


CLiPPs (Current Literature in Pediatric Psychosomatics) are pertinent article reviews from the AACAP Physically Ill Child Committee for psychosomatic clinicians on a range of medical science journals and literature. CLiPPs are edited by Chase Samsel, MD, of Boston Children’s Hospital and Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA. All critical summaries are written by the designated reviewers. If you have any questions or are interested in writing for CLiPPs, please email connect@jaacap.org.
Author Guidelines

JAACAP Connect is interested in any topic relevant to pediatric mental health that bridges scientific findings with clinical reality. As evidenced by our previous editions, the topic and format can vary widely, from neuroscience to teen music choices. What trends have you observed that deserve a closer look? Can you envision reframing key research findings into clinical care? Do you want to educate others on a broader scale, thereby improving the health of children around the country, the world? We encourage all levels of practitioners and researchers, from students to attendings, to join in and participate.

Authors are strongly encouraged to submit an initial outline to the editors, so that early feedback and guidance can be provided prior to the development of a full manuscript. An invitation to submit does not ultimately assure acceptance of the manuscript.

Manuscript Format

For full details regarding manuscript format, such as word count and required submission components, please see the Author Guidelines for JAACAP Connect, found here.

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