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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.
As a medical student, a resident, and as a junior attending, we are often reminded that we are lifelong learners. I remember thinking this was just something people said casually, and after 4 years of medical school and 5 years of residency there wasn’t much more I would need to learn. Boy, was I wrong! The term lifelong learner is a reminder that as our formalized education ends, our search to improve our knowledge base should not end as well. Improving our knowledge base beyond formalized education is considered so important that it has been mandated through continuing medical education and recertification exams. Yet rarely does that alone prepare us for the constant changes occurring in psychiatry, or to identify the treatments and diagnoses we never had the chance to see in our formal education. As clinicians, the responsibility often lies on us to stay on top of knowing what we know, and more importantly, what we don’t know. Being at a large children’s hospital and psychiatric hospital for training, I figured I’d seen all the zebra’s one could see, but quickly realized how mistaken I was, as I’m often reading about diagnoses and symptoms I’ve never seen before. Being only 3 years out of training I figured I must be up to date, but it is truly amazing to see so many new technologies and treatments. In many ways this is what first lead me to JAACAP Connect—the ability to use my colleagues as a source for information to expand my knowledge base.

What we don’t always say is that though we are lifelong learners, we should also be lifelong sharers. Utilizing a shared knowledge base makes this job of being a lifelong learner much more manageable. When experiencing a novel diagnosis or patient encounter, it is not only worthwhile to read and investigate more, but also to share with others through teaching or publishing. Writing and editing for JAACAP Connect has expanded my own clinical knowledge base, which makes me very thankful for those who have taken the time to contribute.

In the interest of utilizing JAACAP Connect to help develop lifelong learners, I am excited to introduce our newest addition, Current Literature in Pediatric Psychosomatics (CLiPPS), as a special section that will be featured in each issue of JAACAP Connect. This new section will provide 3 review articles of recent publications in various journals relevant to child psychiatry. Think of CLiPPS as a quick way to get up to speed on new publications without having to skim every journal relating to child psychiatry. If you are interested in reviewing an article for the CLiPPS section of JAACAP Connect, please do not hesitate to reach out by sending an email to connect@jaacap.org.

This edition of Connect features innovative and unique topics that should be of assistance to any lifelong learner. In the Lab to Smartphone column, Dr. Rettew introduces a topic that was once commonplace, but now innovative, moving away from the 15-minute med check. Next, this issue will shift to the innovative use of technology for treatment. Starting with Drs. Dunne and Domakonda, we look at computer-assisted treatment as a possible therapeutic option in the future. Next, Drs. Nguyen, Lester, and Jeffrey focus more specifically on the use of internet cognitive-behavioral therapy. Drs. Feng and Price introduce us to an innovative way to target trauma through the Attachment, Regulation and Competency (ARC) framework, and Dr. Bampton also discusses innovative ways of thinking about trauma by using an intergenerational approach when assessing possible causes. Finally, Drs. Heinzman and Buckingham discuss menstrual psychosis and ensure readers understand how to distinguish it from more common causes of psychosis.

Hopefully, reading this issue will provide something new for you and your patients, or will inspire you to also publish and spread knowledge to others.

Justin Schreiber, DO, MPH
Editor
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Retiring the Med Check

David C. Rettew, MD

Several years back, I was attending a small conference on pediatric bipolar disorder. The speaker was pitching the creation of a database from actual practicing physicians that might be used to gather more information about what interventions were and were not working out there in the real world of clinical medicine. The presenter was interested in knowing not only which medications were actually being prescribed to patients with bipolar disorder, but also about other aspects of our patients’ lives that might be having an impact on their mental health.

“Of course,” the speaker continued, “We would have to contact the patient’s therapist for that information.”

I was taken back. You would? Really? The comment struck me as odd, and I glanced around the room to see if any of the other participants were revealing puzzled looks before mustering up the courage to raise my hand and express the idea that, actually, most of us might know what is going on in our patients’ world without having to bring in collateral informants.

That brief interaction has stayed with me for years. With some reflection, what was surprising to me wasn’t the concept of split treatment, in which a patient gets their care from both a psychiatrist and a therapist, but how narrowly focused the expectations were surrounding the purview of the psychiatrist as the prescribers of medications.1

Now don’t get me wrong, it is not my intention to downplay the skill and judgement involved in being an excellent psychopharmacologist. What was peculiar, in my view, was the presumption that even someone who sees themselves tasked with “just doing meds” could accomplish this responsibility without a good understanding of what was going on in a patient’s life. Before upping the sleep meds on the request of a parent, isn’t it important to know if your adolescent patient is up all night playing Call of Duty? Before pulling out an antipsychotic to curb a patient’s aggressive behavior, isn’t it worthwhile to make sure that a drunk Dad isn’t yelling at him every night? There also needs to be at least some knowledge of what is happening in psychotherapy, as many best practice recommendations explicitly state that some medications should only be considered after therapy has been insufficient.

These things may sound obvious, but the reality is that such information is easily missed when both doctor and patient are rushing through a quick inventory of symptoms and then simply matching them up with best medication.2 For most mortals, it is simply unrealistic to expect that all the relevant information from a patient and their family can be ascertained, processed, and converted to good treatment decisions in 15 minutes. With some extra time, not only does a clinician usually get more information but also better information because there is a stronger relationship between the doctor, the patient, and the family.

The progression of psychiatric appointments from being about 50 minutes long and focusing on the entirety of the patient’s mental health to 15-20 minute visits concentrating on psychiatric medications has occurred over many decades. It has been attributed to a number of forces, most notably those related to economics and workforce shortages. In theory, the med checks exist as just one part of a coordinated mental health care approach. In reality, the psychiatrist often works with a lot more isolation and fragmented knowledge of what treatment, if any at all, is taking place outside of the psychiatrist’s own session. It’s little wonder then, that the med check has become a target of complaints and
scorn from both patient and psychiatry advocates alike who express concern that the model is driving the use of excessive and unnecessary medication use. These critiques are generally leveled at the proverbial “system” that has created this structure but can go after individual providers of psychopharmacological care as well. And while many of the concerns are well founded, it’s worth acknowledging that criticizing the split treatment model in favor of the psychiatrist being both psychopharmacologist and therapist (and everything else), is a lot easier when you don’t accept Medicaid and can get good compensation for that full hour you are spending with each patient.

Fortunately, you don’t have to “just do meds,” even under conditions when you are taking insurance and feeling pressure to see as many patients as possible. Some psychiatrists do indeed also function as a patient’s primary therapist, but those who don’t can still operate in that beloved hybrid role of doctor, counselor, wellness coach, social worker, advocate, and motivational speaker by taking a little extra time than what would be provided in a standard med check. This time can be used to broaden the focus of the appointment beyond the realm of symptoms and side effects. Exactly how much extra time a psychiatrist must spend to meet this threshold depends on characteristics of the family, the patient, and, of course, the psychiatrist. Especially under conditions when families are being seen closely by other mental health professions, and when information is well communicated throughout the treatment team, the psychiatrist doesn’t need to spend a whole lot of time asking redundant questions. In my own clinic, where med checks have been banned both in name and in spirit, some of our psychiatrists find it optimal to schedule hour long appointments somewhat infrequently (like every 3–4 months), as long as there are other clinicians working more regularly with the family. My default follow-up appointment tends to be 30 minutes long every 1–2 months, which very often is modified to fit the needs of the family. At some appointments, the clinical situation demands that medications move front and center. Frequently, however, they are of secondary concern. After some active listening followed by some combination of parental advice, psychoeducation, clumsy mini-speeches designed to boost motivation, advocacy, and designing a plan going forward, I’m well known for asking with about 5 minutes left in the session, “Is there anything about the medications we need to talk about?”

The 15-minute med check is indeed due for retirement. It limits our capacity to connect with patients, stunts our ability to empower positive change in families, and creates a self-fulfilling “if you’re a hammer than everything looks like a nail” approach to psychopharmacology. Expert knowledge of psychiatric medications is necessary but hardly sufficient in getting our patients to the place they want to be. While at times it may seem as though the med check is the de-facto mode of interaction between patient and psychiatrist these days, this can change whenever enough of us have decided that it should.

References
About the Author

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.

Disclosure: Dr. Rettew has received royalties for his blog for Psychology Today and from Guilford Press.

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.
Disparities in accessing mental health care for children and adolescents are a major problem in the United States and elsewhere. This problem stems from many sources, including a significant shortage of child and adolescent psychiatrists and other mental health workers, an unequal distribution of services disproportionately concentrated in urban areas, insufficient awareness of child mental health, stigma associated with mental health problems, challenges to recognizing and diagnosing childhood mental health disorders, and inequities in funding for these services. There have been a number of different approaches to overcoming these barriers to care. This article focuses on the nascent application of computer-assisted therapies (CATs) to overcome the difficulties in accessing effective, evidence-based psychotherapeutic treatments.

CATs are computer-based mental health treatment programs available either on CD-ROM for a personal computer (cCAT) or via the internet (iCAT). They present discreet therapy sessions delivered over a period of time and are typically part of an established psychiatric treatment plan. CATs are aimed to improve access to psychosocial treatments and increase fidelity to evidence-based treatments.1

Psychiatric consultations to primary care providers (PCPs) aim to improve diagnostic decision making and access to psychosocial and psychopharmacologic treatment for children with mental health and behavioral problems in primary care settings.2,3 Whereas PCPs may be more comfortable prescribing psychotropic medications, most rely on non-physician mental health providers to provide psychotherapeutic services, leaving a potential gap in the availability of effective treatments. Various psychotherapies are effective in treating childhood mental health disorders, but availability of such evidence-based treatments is primarily limited to urban areas and academically-affiliated treatment centers. Conversely, counseling services may be of uneven quality and are less likely to be available in rural or inner-urban areas.4,5 CATs offer an accessible, widely available, and standardized approach to address these disparities and improve treatment adherence and outcomes. Moreover, CATs enable providers to take an interactive approach to treatment (ie, video demonstrations of how to manage difficult emotions or situations),6 that is both educational and engaging for technologically-savvy young patients.

Computer-Assisted Therapy

What Are Computer-Assisted Therapies (CATs)?

- Usually based on established evidence-based psychosocial treatments.
- Most effective CAT programs with the highest adherence rates involve a relationship with a therapist as part of an agreed treatment plan.
- Most often accessed online.
- Visual formats vary from cognitive-behavioral therapy (CBT)-based verbal cues with or without embellishments to virtual environments resembling a computer game.
- Largely proprietary and/or available for a per-user fee.

CATs are digital programs intended to replicate evidence-based psychiatric treatments. They are generally proprietary, and available online at out-of-pocket costs that can exceed several hundred dollars. The efficacy of many CATs is supported only by pilot studies,
although several have randomized controlled trials that demonstrate their degree of effectiveness compared to placebo, treatment-as-usual (TAU), or in-person CBT.

The History of Computer-Assisted Therapy

Early efforts to convert manualized treatments to computerized formats began in the 1980s, but CATs did not develop in earnest until the mid-1990s, coinciding with increased availability of personal computers. Numerous CATs have since been developed for the treatment of various psychiatric symptoms and disorders, including depression, anxiety, obsessive-compulsive behavior, preschool anxiety, social skills for autism spectrum disorder (ASD), and insomnia.

Moodgym, developed in Australia more than 20 years ago, was one of the first attempts to create an effective computer-based treatment for depression. However, the program was text-based, which may have contributed to high non-completion rates. Other CATs have converted printed manualized CBT to a CD-ROM for personal computers. More recently, CAT developers have utilized video games and animated programs to teach skills with newer, more sophisticated CATs using virtual reality (VR) technology to provide job interview training for adults with ASD, deliver anger management treatment to an adolescent, and help children overcome school avoidance. Also in development are CATs for treating anxiety in very young children and teaching social skills to children with ASD.

CATs in Practice

Currently, CATs are used more frequently in countries with a national health service, such as Australia (the earliest developer of CATs), the Netherlands, Great Britain, and India, among others. These countries emphasize efficient use of limited resources, and CATs allow mental health workers to quickly assist more people. The US lags far behind other countries in CAT utilization and incorporation into practice. The greatest benefits of CATs are increasing the availability of psychosocial treatments in underserved areas, increasing fidelity to evidence-based psychosocial treatment principles, and improving psychotherapy treatment outcomes. Of the CATs listed in Table 1 (a non-inclusive sample of CAT programs encountered in literature searches for this article), only Camp Cope-a-lot, Cool Little Kids, Cool Teens, moodgym, SPARKS, and Stressbusters are currently available in the US or Canada.

Several reviews have described and compared the effectiveness of available CAT programs as treatment adjuncts, or, rarely, standalone treatments. These reviews made several observations: 1) treatment incorporating CATs compares favorably with standard care; 2) CATs are well-accepted by both consumers and providers; 3) CATs are more effective for the treatment of anxiety than depression; and 4) CATs as a self-help, standalone treatment had high non-completion rates. Thus, when integrated into a comprehensive treatment plan via a therapeutic relationship with a caring professional, CATs have the potential to improve patient outcomes and address barriers to care in underserved, at-risk children and adolescents.

Despite encouraging clinical data, CATs are associated with important limitations. First, CATs are expensive, and their use is not currently reimbursed by insurers, making costs prohibitive for their intended patient population. However, Medicare and private medical insurers are moving towards measurement-based outcomes reimbursement, which could make standardized, easily trackable, computerized treatments more attractive to insurers. Even if CATs are not directly reimbursed through insurance, their increased efficiency compared to office-based treatments may offset their costs and prove a worthwhile investment for insurance companies and patients alike. Additionally, not all CATs have proven effective. A large Dutch study testing the cost effectiveness of CATs used by patients in several Dutch mental health centers found that CATs, used by only 3% of the sampled patients, were no more effective than TAU but were more costly. These findings contrast with most others that show high patient satisfaction and equal or better treatment outcomes among those completing treatment, but without addressing costs.
In a recent study, CATs failed to show benefit over sham treatment to improve working memory at 6 and 12 months in children with attention-deficit/hyperactivity disorder. Hoek, et al. found that an internet-based problem solving therapy was not significantly better than the control wait list for adolescents with anxiety and depression. Similarly, iCHILL, an online-based CAT developed to treat anxiety in young adults, was ineffective across four experimental arms compared to the control arm. Notably, neither study involved office-based treatment and the exclusion of this therapeutic relationship may have negatively impacted CAT outcomes. The above limitations reinforce that CATs are intended to supplement, not replace, evidence-based treatments. Cost concerns also highlight the importance of conducting larger, randomized controlled trials of CATs, as definitive evidence of their utility would make their use more ubiquitous, and subsequently more affordable.

CATs that are entirely self-help and do not include a therapeutic relationship have high non-completion rates and consequently low efficacy. Although CATs do not seem appropriate for treating patients with impaired

Table 1. A Non-Inclusive Sample of Computer-Assisted Therapies (CATs) Programs

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Therapeutic Target</th>
<th>Age Range</th>
<th>Modality</th>
<th>Randomized Trials</th>
<th>Use of Therapist</th>
<th>Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIP OCD⁷</td>
<td>OCD</td>
<td>Adolescents</td>
<td>iCBT</td>
<td>Yes</td>
<td>Online therapist support</td>
<td>Possibly⁵</td>
</tr>
<tr>
<td>BRAVE-Online²²</td>
<td>Anxiety</td>
<td>Children and adolescents</td>
<td>iCBT</td>
<td>Yes</td>
<td>Internet therapist support</td>
<td>Yes</td>
</tr>
<tr>
<td>Bite Back²³</td>
<td>Depression, anxiety</td>
<td>Adolescents</td>
<td>cCBT</td>
<td>Yes</td>
<td>No</td>
<td>Possibly⁵</td>
</tr>
<tr>
<td>Camp Cope-a-Lot¹</td>
<td>Anxiety</td>
<td>Children, early adolescents</td>
<td>cCBT</td>
<td>Yes</td>
<td>In person for half of the sessions</td>
<td>Probably⁶</td>
</tr>
<tr>
<td>Cool Little Kids Online¹⁷</td>
<td>Anxiety</td>
<td>Parents of preschoolers</td>
<td>cCBT</td>
<td>In progress</td>
<td>Telephone</td>
<td>Unknown</td>
</tr>
<tr>
<td>Cool Teens²⁴</td>
<td>Anxiety</td>
<td>Adolescents</td>
<td>cCBT</td>
<td>Small case study</td>
<td>Telephone</td>
<td>Unknown</td>
</tr>
<tr>
<td>iChill²⁵</td>
<td>Anxiety</td>
<td>Young adults</td>
<td>iCBT and behavioral activation</td>
<td>Yes</td>
<td>Telephone reminders</td>
<td>Ineffective</td>
</tr>
<tr>
<td>moodgym²¹</td>
<td>Depression, anxiety, panic disorder</td>
<td>Adolescents, adults</td>
<td>cCBT or iCBT</td>
<td>Yes</td>
<td>1st session with therapist, then prn</td>
<td>Possibly⁵</td>
</tr>
<tr>
<td>Rainbow SPARX²⁶</td>
<td>Depression</td>
<td>LGBT adolescents</td>
<td>Video game cCBT</td>
<td>No</td>
<td>Weekly site visits or telephone</td>
<td>Possibly⁵</td>
</tr>
<tr>
<td>SPARX¹²</td>
<td>Depression</td>
<td>Adolescents</td>
<td>Video game cCBT</td>
<td>Yes</td>
<td>Weekly site visits or telephone</td>
<td>Possibly⁵</td>
</tr>
<tr>
<td>Stressbusters²⁷,²</td>
<td>Depression</td>
<td>Adolescents</td>
<td>cCBT</td>
<td>Yes</td>
<td>All sessions</td>
<td>Possibly⁵</td>
</tr>
<tr>
<td>Think, Feel, Do²⁸</td>
<td>Depression or anxiety</td>
<td>Adolescents (11-16)</td>
<td>cCBT</td>
<td>Yes</td>
<td>No</td>
<td>Possibly⁵</td>
</tr>
</tbody>
</table>

Note: ACT = Anger Control Therapy; cCBT = computer-based cognitive behavioral therapy; iCBT = internet-based cognitive behavioral therapy; PD = Panic Disorder.

⁵ Programs that have been validated by only one controlled study.
⁶ Programs that have been validated by two or more controlled studies but by the same research group.
reality testing, there certainly could be a role for CATs in prevention and rehabilitation efforts with bipolar disorder or psychosis. These programs are currently being developed.

Future of CATs

CATs are rapidly developing technologies with the potential to increase the availability of psychosocial treatments in underserved areas, optimize treatment monitoring and adherence, and improve psychotherapy treatment outcomes. CATs have already shown promise as adjunctive treatments for anxiety, depression, ASD, and technological advances will likely increase their appeal in youth. These innovative treatment approaches create an exciting frontier for expanding access to effective treatments. However, not all CATs have proven effective, and as with any new treatment, providers must weigh the evidence of their effectiveness for the desired outcome before incorporating them in practice. Providers considering CATs should always download and assess their suitability before using them with patients. Lastly, providers should remember that a strong therapeutic relationship is the most important predictor of successful treatment with CATs and should prioritize fostering this connection.

Take Home Summary

Computer-assisted therapy (CAT) is a promising technology with the capacity to expand availability of high-quality, evidence-based, effective psychotherapy for childhood psychiatric disorders, especially for at-risk youth in under-resourced areas. CATs have been rapidly accepted in countries with a national health care system. However, wide utilization of CATs in the United States awaits a demonstrable reimbursement mechanism.

References


About the Author

John Dunne, MD, is an embedded child psychiatric consultant in the PeaceHealth Pediatric Clinic and Family Practice Clinic, Bellingham, WA.

Mirjana Domakonda, MD, is a child and adolescent psychiatrist and Director of the Clinical Trials Unit at Hartford Hospital and the Institute of Living, Hartford, CT. She is also an Adjunct Assistant Professor in Psychiatry at Yale University School of Medicine. Dr. Domakonda serves as co-chair of the AACAP Early Career Psychiatrist Committee and is a member of the AACAP Health Information Technology. Her primary area of research is in using fMRI to understand the neurobiological correlates of eating disorders and obesity. In addition, Dr. Domakonda is interested in the use of digital technology to advance child and adolescent psychiatry practice and access to mental health care.

Disclosure: Dr. Dunne reports no biomedical financial interests or potential conflicts of interest. Dr. Domakonda receives grant or research support from Janssen Pharmaceuticals, Otsuka Pharmaceuticals, and Biohaven Pharmaceuticals. Dr. Domakonda also research receives support from Hartford Healthcare, and received support from an NIMH T32 Postdoctoral Fellowship for Translational Research in Child Psychiatry at Columbia University American Academy of Child and Adolescent Psychiatry Pilot Research Award for Child Psychiatry Residents and Junior Faculty during the preparation of this manuscript.
AACAP AWARD SPOTLIGHT:
Michael A. Shapiro, MD

AACAP’s PFTMI program paired me with Dr. David Kaye, a “seasoned veteran” in teaching psychodynamic psychiatry to fellows. We were introduced at the 2018 AACAP meeting during PFTMI’s day-long project planning session. Through the program, I also met other leaders in the field serving as mentors, and other early career mentees who have the shared goal of promoting the continued teaching of psychodynamics in child and adolescent psychiatry fellowships. Since the meeting, Dr. Kaye and I have had monthly phone calls to help me attain my goal of developing a structured psychodynamic didactic curriculum for our fellowship program at University of Florida. I have benefited from Dr. Kaye’s experience and I value our comradery and bonding over psychodynamics and teaching. I appreciate being able to bounce ideas off Dr. Kaye; he has contributed mightily to potential outside-the-box ways of teaching psychodynamics to future generations of child and adolescent psychiatrists. I continue to make modifications to my didactic curriculum with Dr. Kaye’s help, which will hopefully enable me to reach future generations of fellows regarding the importance that psychodynamics still holds in treating children, adolescents, and families.

The Rieger Award paper was a labor of love on how I came to successfully treat an adolescent with what appeared to be psychotic symptoms with psychotherapy and avoided the use antipsychotic medication during my fellowship. My favorite part of winning the award, by far, was meeting the Rieger Committee members and bonding over dinner with peers who have a passion for psychodynamic psychotherapy. It felt like home! I also came to understand and value the legacy of Dr. Norbert Rieger. This award opened up so many more opportunities for me, including making my first presentation at an AACAP Annual Meeting, co-editing a textbook chapter, and joining the Psychotherapy Committee. But as any good psychodynamic psychiatrist would tell you, the most important, rewarding aspect of this experience was, and is, building and sustaining relationships. I must give special thanks to Dr. Rachel Ritvo, who has provided me with much appreciated mentorship and friendship, and from whom I have learned so much on how to foster passion and excitement for this field. This award was also a springboard to the PFTMI, which again supports invaluable relationships that continue to inspire my work and passion in this area.
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Internet Cognitive-Behavioral Therapy: Basics for the Child and Adolescent Psychiatrist

Jenny Nguyen, MD, Patricia Lester, MD, Jessica Jeffrey, MD, MPH, MBA

Cognitive-behavioral therapy (CBT) is an evidence-based treatment for a range of behavioral health disorders, including depression and anxiety. CBT is traditionally conducted in-person and has been shown to have at least a 50% response rate with decrease in symptoms. However, there are barriers that prevent traditional CBT from being an available option. Children and adolescents may lack access to in-person CBT treatments due to various issues, such as time conflicts with school hours, lack of transportation to clinics where CBT is delivered, and an overall paucity of CBT services in the community. Additionally, patients may be reluctant to access in-person care due to stigma associated with behavioral health conditions and treatments.

One modality for addressing some of the barriers to in-person care is internet CBT (iCBT), the delivery of cognitive behavioral therapy via the internet. This paper reviews commercially licensed iCBT programs, specifically those adapted for children and adolescents with depression and/or anxiety.

What Is Internet CBT (iCBT) and Is It Effective?

iCBT takes the form of digitally delivered modules comprised of multi-media content, questionnaires, and other interactive content. iCBT is self-managed by the patient, generally without monitoring by a provider. This novel method of delivering therapeutic services offers an alternative solution to challenges related to receiving in-person CBT. Through providing treatment over the internet, iCBT allows patients to access treatment at a time convenient for them and in the comfort of their own personal space.

A recent meta-analysis examined randomized controlled trials (RCTs) of iCBT and other technology delivered interventions, in study participants aged 6-18 years. The choice of control group varied by trial but included placebo, waiting list, attention control, and face-to-face CBT. The overall conclusion was that iCBT led to improvements in measures of anxiety and depressive symptoms at post-intervention compared to the waiting list group. This conclusion was based on a calculation of the effect size (Hedges’ g) across 17 studies (g = .66 [95% CI 0.42 to 0.90], p < .001). There was a smaller effect size compared to placebo and attention control groups. iCBT did not demonstrate statistically significant effects over traditional CBT (n = 4, g = 0.11 [95% CI -0.06 to 0.28], p = 0.92). In addition, effect sizes were greater when there was contact with a therapist, rather than purely self-help.

What iCBT Programs are Available for Children and Adolescents With Depression/Anxiety?

iCBT programs were initially developed for adults and gained traction outside of the US. Over time, some of these programs were adapted for children and adolescents. At the time of this paper, the majority of iCBT programs in the US are targeted toward adults.

In selecting programs to review for this paper, we searched for programs that met two criteria: 1) created or adapted for children and adolescents with anxiety and depression and 2) have been evaluated in RCTs and demonstrated non-inferiority to in-person therapy. Based on these factors, two programs – moodgym and BRAVE-Online – were included in this paper. See Table 1 for more details of each program discussed below.

This field is rapidly evolving, and there are a variety of free and commercial programs delivered in electronic media. At the time of writing, we found that the free programs did not meet the inclusion criteria above. However, there
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Of note, there are 2 versions of BRAVE offered: 1) BRAVE Self-help Program, 2) BRAVE-Online Therapist Program.
is active research into other iCBT programs and clinicians are encouraged to look up review papers for an updated evaluation of the various interventions.2

**moodgym**

moodgym is a standalone iCBT program designed to reduce mild-to-moderate symptoms of depression and anxiety in youth aged 11-17 years and in adults. The program helps users to identify and overcome distressing emotions and dysfunctional thinking patterns as well as develop good coping skills through the use of animation, interactive games, and workbook exercises. moodgym consists of 5 prescribed modules, each lasting approximately 20-40 minutes, that focus on cognitive restructuring, the relationship between thoughts and emotions, dealing with stress and relationships, as well as relaxation and meditation techniques.3 It is recommended the modules are completed over a 6-week period.

Calear *et al.* conducted an RCT in an Australian adolescent population, examining the effectiveness of moodgym in reducing symptoms of anxiety and depression. Both male and female moodgym users had significantly lower levels of anxiety, with sustained effects at 6-month follow-up compared to wait-list controls. Only male users of moodgym had significantly decreased symptoms of depression compared to waitlist controls, though these effects were less profound compared to reduction in anxiety.4

To explore the potential effects of iCBT in female adolescents, O’Kearney *et al.*, investigated the effects of moodgym as part of a high school curriculum for adolescent girls, with a control group receiving the school’s standard personal development curriculum about nutrition. The study suggests that depressive symptoms in the intervention group decreased faster, as measured by the Centre for Epidemiological Studies Depression Scale (CESD21) at post-intervention and follow-up. In addition, the investigators found that the effect was greatest for participants with higher initial CESD21 scores.5

Generally, moodgym users who completed ≥2 modules experienced decreased symptoms of depression, although the majority of participants did not complete the entire program.1,4 iCBT can be combined with clinical practice for sustained effects. For instance, an RCT showed that combining the moodgym program with in-person therapist support is effective in reducing depressive and anxiety symptoms with benefits still present at 6-month follow-up.6

**BRAVE-Online**

BRAVE-Online is an evidence-based iCBT program that aims to help children and adolescents ages 8-17 years old reduce anxiety. The program teaches users how to recognize anxiety, develop relaxation skills, and replace negative thinking with more positive thinking styles through the use of animations, puzzles, quizzes and interactive games. The program consists of 10 sessions (60 minutes each) to be completed sequentially over a 10-week period.

Complementary psychoeducation sessions for parents are also available via separate parental login.8 BRAVE-Online is currently available in two formats in Australia: 1) BRAVE Self-help Program, 2) BRAVE-Online Therapist Program. With the BRAVE-Online Therapist Program, a trainer is available online to provide guidance through the program to help clients overcome anxiety.7 Although this program is not currently available in the US, the organization encourages providers to contact them for access.

Compared with age-matched wait-list controls, children who participated in BRAVE-Online, showed more improvement in anxiety symptoms, with 75% of these children symptom free at 6-month follow-up.8 Another study showed that children ages 7-14 years old who received both standard clinic treatment and combined clinic-internet treatment had significant improvement in anxiety symptoms and were more likely to be anxiety free than wait-list controls. This improvement was maintained at 12-month follow-up where approximately 80% of BRAVE-Online users remained anxiety free.9
When Should iCBT be Considered for Child and Adolescent Patients?

iCBT has generally been found to be effective for patients with mild-to-moderate symptoms of anxiety and/or depression. Providers should consider the following prior to recommending iCBT:

- **Motivation and cognitive ability of the patient:** Patients who are motivated for treatment are more likely to remain adherent to the program. Patients must have sufficient cognitive ability to work through the program content, with some assistance from parents, as needed.

- **Likelihood of receiving no treatment or support:** A variety of factors may make it difficult for patients to receive in-person treatment, such as transportation challenges, lack of available therapists in the community, or perceived stigma of seeing a therapist regularly. In these cases, iCBT programs may be good treatment options, especially when taking into consideration some patients may not receive treatment if not for iCBT.

- **Safety:** iCBT is not recommended for patients experiencing an acute crisis or severe anxiety and depression. iCBT is not currently indicated for patients with psychosis and bipolar disorder as there have been fewer studies and applications for more severe conditions. The programs do not actively monitor for safety or self-harming behaviors. Prior to initiating iCBT, clinicians should screen for severity of the symptoms and must assess for suicidal ideation, mania, and psychosis. In these cases, the provider should follow the patient closely in-person and may consider initiating iCBT when severe symptoms have improved and the patient is stabilized.

How Can iCBT be Incorporated Into Treatment?

iCBT may be utilized as a component of an overall treatment plan. iCBT can be used as a stand-alone therapy option for patients with mild-to-moderate depression and anxiety who receive medication management from a child psychiatrist. Another way to utilize iCBT is as an adjunctive therapy for patients who already receive in-person therapy. Used in this way, iCBT can be utilized to enhance care between therapy appointments. The iCBT programs are accessed online and their content can serve as homework for patients. Additionally, iCBT may be utilized to space-out appointments as patients become more stable. Through this hybrid model, youth are given independence to work through the iCBT program for symptom management while their clinician still has an active role in guiding their progress.

Clinicians should also consider some of the challenges associated with implementing iCBT. The most common challenge with iCBT programs is that patients often do not complete the entire program, which has been shown to decrease overall effectiveness. However, studies have demonstrated that reminder calls to patients may increase adherence. One way to address this is to implement a reminder system, through email, phone calls, or text messages, for patients to complete the iCBT program. Some programs such as BRAVE-Online also have a built-in email reminder system to help facilitate this process. Alternatively, a patient may print out weekly summaries to share with the clinician during in-person sessions. Given reminder systems and in-person progress reviews have been shown to be associated with increased adherence to iCBT, it is likely these tactics will also work with youth. However, further research is needed to determine the best approaches for enhancing iCBT adherence.

Conclusion

As child and adolescent psychiatrists, we provide care for a population that is young and tech savvy. In order to optimize treatment, it is important child and adolescent psychiatrists learn about iCBT, evaluate it for themselves, and understand how the treatment modality can be feasibly incorporated into practice. As a starting point, we encourage clinicians to further investigate the iCBT options reviewed in this paper. For those seeking more information, recent meta-analyses can provide a listing of additional iCBT programs.
iCBT programs are being developed and backed by a growing body of evidence. They present an opportunity for patients to become more involved in their own care, and for clinicians to be engaged in the evolving landscape of mental health care.

Take Home Summary

CBT interventions delivered via the internet (iCBT) can make mental health care more accessible. iCBT programs are being developed and backed by a growing body of evidence. They present an opportunity for patients to become more involved in their own care, and for clinicians to be engaged in the evolving landscape of mental health care.

References

About the Authors

Jenny Nguyen, MD, is a PGY-2 resident physician in Psychiatry at the University of Washington. She also currently serves as the Area 7 Resident-Fellow Member Deputy Representative for the APA Assembly. She attended medical school at the David Geffen School of Medicine at UCLA, where her work on this paper began. Her interests include child, adolescents & transitional-age youth mental health, suicide prevention, technology innovation for mental healthcare, and quality of care for Asian American communities.

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Disclosure: Drs. Nguyen, Lester, and Jeffrey report no biomedical financial interests or potential conflicts of interest.
**Hidden Obstacles to Treatment in Child and Adolescent Psychiatry: An Introduction to Intergenerational Trauma**

Chris Bampton, BA (Hons Psych), BMBS, FRANZCP

**Case (Part 1)**

Angel, a 15-year-old adolescent girl from a middle-class Asian immigrant family, lives with her parents and 13-year-old sister. She presents to an outpatient child and adolescent mental health service with symptoms of depression, some symptoms of anxiety, regular cutting, and a history of several suicide attempts by overdose. She smokes marijuana on a regular basis but does not drink alcohol. She has no pertinent medical, past psychiatric, or social history. The family denies any family history of diagnosed mental illness. However, the family mentions that Angel’s grandparents experienced trauma.

Angel starts taking a selective serotonin reuptake inhibitor (SSRI) medication for treatment of depression and anxiety, and she attends both weekly individual cognitive-behavioral therapy (CBT) and a group program for self-harm based on dialectical behavior therapy (DBT). Her parents are appropriately involved in her treatment.

Despite high levels of intervention, Angel remains depressed and anxious, continues smoking marijuana, and continues to engage in self-injurious behaviour. The clinical team decided to explore Angel’s grandparents’ history of trauma.

**Introduction**

The purpose of this article is to illustrate barriers to the treatment of children and adolescents with mental health problems that may not be evident in standard psychiatric assessment. In this case, the presence of intergenerational psychological trauma, which is manifested in parental factors, grandparental factors, and the sociocultural background.

Intergenerational psychological trauma is also known as transgenerational trauma, developmental trauma, historical trauma, or secondary traumatization. It is conceptualized as trauma symptoms that are exhibited in the immediate victim or witness to trauma and passed on to others—in particular dependents—who were not exposed directly to the trauma.

Intergenerational trauma is a well recognized phenomenon in many professional areas, especially those specializing in family violence, torture, child abuse, and psychodynamic psychotherapies. It is less well recognized in psychiatry due to its absence in diagnostic manuals.1

The prevalence of intergenerational trauma is unclear, in part due to lack of this diagnostic recognition in psychiatry. However, one study established that grandchildren of Nazi Holocaust survivors in Canada were over-represented in child psychiatry clinics by 300%.2

Building on the summary by Milroy,3 for this paper, intergenerational trauma is defined by the author in the following manner:

The presence of significant psychological or physical trauma (including loss or grief), which results in negative changes in the psychological and physical functioning of an individual. These changes impact upon the person’s ability to manage relationships. These changes subsequently effect the psychological functioning of the traumatized individual’s children or dependents. These children may then develop negative psychological patterns which may be passed on again to further generations.

However, we also need to define what is meant by psychological trauma in the context of this article. The US National Institute of Mental Health4 describes it as:
Hidden Obstacles to Treatment in Child and Adolescent Psychiatry

... an emotionally painful, shocking, stressful, and sometimes life-threatening experience. It may or may not involve physical injuries, and can result from witnessing distressing events.

Expanding on this, Herman\textsuperscript{5} championed a pivotal change in the conceptualization of trauma, dividing the entity into ‘simple trauma’ and ‘complex trauma.’ Simple trauma is familiar to psychiatrists, corresponding to \textit{DSM} and \textit{International Classification of Diseases} (ICD) classifications of single events of great magnitude, and long-recognized in war veterans and disaster survivors. In contrast, complex traumas may not be as overwhelmingly threatening to the body or psyche, but occur repeatedly over a protracted period of time, and are associated more commonly with domestic violence and sexual abuse. Complex trauma is often knowingly perpetrated by a caregiver, which is qualitatively different from natural disasters, accidents, war, and torture.

Simple trauma is akin to the spiral fracture of a skier’s shin twisted beyond its limit in a single incident. Complex trauma is likened to the stress fracture of a marathon runner resulting from repetitive impacts.

\textbf{Historical Aspects}

One of the earliest conceptualizations in psychiatry of intergenerational trauma appeared in observation of traumatic themes in children of Holocaust survivors in family therapy clinics in Canada.\textsuperscript{6} This was followed by research demonstrating that, relative to clinical controls, adolescents with parents who were Holocaust survivors scored higher on measures of conduct problems, personality problems, and immaturity/inadequacy, and exhibited lower levels of personal functioning.\textsuperscript{7} Further research found increased vulnerability to posttraumatic stress disorder and other psychiatric diagnoses in adult children of Holocaust survivors.\textsuperscript{8} However, subsequent findings have only partly supported this. A later meta-analyses demonstrated intergenerational transmission of Holocaust trauma to children and grandchildren but only in clinical samples, not in wider samples, concluding that intergenerational trauma was one part of a complex stress-diathesis model.\textsuperscript{9}

Erikson\textsuperscript{10} and others have expanded on this framework and applied it to other major disasters affecting populations at large, such as floods and nuclear disasters. More recently, research has focused on the intergenerational effects of terrorism. An example of this is the study of cortisol levels in mothers and infants where the mother was at or close to the World Trade Center during the September 11, 2001 attacks. Mothers who developed trauma symptoms (and their infants) showed lower cortisol levels than mothers who did not report trauma symptoms.\textsuperscript{11}

Similar observations were described by Fraiberg in \textit{JAACAP} in 1975,\textsuperscript{12} investigating feeding, sleep, toileting, and behavioural difficulties in infants and toddlers of mothers who had experienced trauma, such as parental mental illness and child abuse. This research also documented successful treatment with psychoanalytic techniques delivered to the mother-child dyads.

Recently, the concept of intergenerational trauma has also been prominent in understanding the collective histories of indigenous and cultural minorities, such as First Nations\textsuperscript{13} and Australian Aborigines.\textsuperscript{3}

\textbf{Etiological Concepts}

In the literature, intergenerational trauma has been examined from a variety of standpoints including biological, psychological, and sociocultural. Most recently there have been the early stages of synthesis of these varying approaches via epigenetic studies.\textsuperscript{14,15} Unfortunately, at present there remains a lack of cohesive theory as to the mechanism by which simple trauma is transformed into complex trauma. However, Attachment Theory has provided one of the more accepted and evidence-based understandings of transmission of trauma from parent to child. Bowlby,\textsuperscript{16} and later Main and Solomon,\textsuperscript{17} developed this theory which describes the function and development of interpersonal relationships. Ainsworth famously categorized the parent-child relationship into patterns of attachment that were set by the age of 11-24 months,\textsuperscript{18} and her group also demonstrated a child’s attachment style is best predicted by parental attachment style. ‘Secure attachment’ is
the most common pattern (62% of the normal population)\textsuperscript{19} and is regarded as most adaptive. For those who are securely attached, significant relationships are a source of comfort and emotional stability. ‘Insecure attachment’ is less common and has two subtypes: avoidant (15%), those who avoid reliance on others; and ambivalent (9%), those who oscillate between clinging to and rejecting others.\textsuperscript{19} Insecure attachment causes interpersonal issues, but only has weak association with psychiatric illness. ‘Disorganized attachment’ is the final type (15%).\textsuperscript{19} It arises from profoundly adverse parenting experiences and is more strongly associated with increased psychiatric morbidity.\textsuperscript{20}

If, then, we use attachment as a mechanism for transmission of trauma, the following pattern may be observed. An adult with secure or insecure attachment (but lacking major psychological morbidity) may be traumatized by a simple trauma or loss. The changes in their behavior because of trauma may manifest in changes to parenting style which are experienced as complex trauma by their children; this results in less healthy attachment in the next generation. This may then manifest in either overt psychopathology, or more disrupted attachment, which may then be passed on again to further generations as demonstrated in Figure 1.

The diagram in Figure 1 illustrates three generations. However, transmission may be over more or fewer generations. When there are intermediary stages, the parent may act as a silent or partially silent “carrier” of intergenerational trauma. This explains cases for which there is an apparent absence of gross psychiatric history in the intervening generation if an in-depth interpersonal history of family members is not explored.

A useful analogy is Newton’s Cradle (Figure 2). The system is stable initially, but a trauma (or force) is introduced to the system generating a change. Although each unit in the chain of events is impacted, intermediate units show little or no change, only the last unit in the chain shows clearly observable change.
Further history is taken from Angel's parents. Angel's mother describes her own early childhood as quiet and family-oriented. Angel's mother's father went to war when she was 8-years-old, and when he returned, this pre-morbidly mild-mannered man was described as 'changed'. Domestic violence, social withdrawal, and alcoholism characterized family life for Angel's mother in her teenage years. There is insufficient information to identify Angel's mother's attachment style as a young child, however, it appears her interpersonal style shifted dramatically as a result of family dysfunction. Angel's mother describes her relationship with Angel as intense and argumentative, similar to her own relationships with her parents.

Angel's father describes his upbringing as privileged but miserable. His father was often away on business, and he recalls that his father did not engage in parenting even when he was home. His mother was an alcoholic and may have suffered from undiagnosed depression following multiple family deaths and he describes his relationship with her as emotionally empty. His own childhood was focused on academic achievement, which was the only part of his life in which his parents took an interest. He tends to avoid talking about or dealing with emotions, in keeping with a possible insecure avoidant attachment. Taken as a whole, Angel's parents' styles, though quite different, both make them unavailable to her in terms of emotional support.

The family is referred for family therapy. This allows the parents to reflect upon the relationships they had with their own troubled parents and how these relationships shape their current parenting style. Angel's parents decide to endeavor to be more available to her, and Angel gains some understanding of why her parents struggle to support her, giving her more willingness to seek them out.

Three months later the family reports Angel has improved significantly. She is no longer depressed. She still experiences anxiety at times of stress but can access support from her parents when needed. She is no longer self-harming, and her substance use has decreased.

Management

Identifying intergenerational trauma is done by observing factors beyond the identified client and located within relationships in the family, sometimes decades or generations prior to symptom onset. It is important to take a detailed family history, initially focusing on parental mental health, addictions, losses, and other life events impacting family (war, forced dislocation, loss of culture). This needs to be expanded to understand the impact on previous generations and how this may have influenced parent-child interactions.

This case has been illustrated with family therapy. However, there are many interventions that may be helpful either with the parents alone or with the whole family. These include family therapies, attachment-based therapies (such as mentalization-based treatment), or any therapy which promotes parental reflective function or improvements in interpersonal function. Additionally, individual trauma-oriented therapy for parents may also be useful.
In the classic 1947 *Lancet* paper, Platt espoused the importance of history-taking over examination and investigations, a position that has continued into later generations despite advances in medical science. Medicine remains an imprecise science, psychiatry even more so; as such, history taking, despite its subjective limitations, remains our most potent tool. Assessment of a child or adolescent often involves direct history-taking with the child and history-taking with the family or school about the child, but an often-neglected area is history-taking about the systems around the child.

An intergenerational perspective can reconceptualize blame, shifting it away from the identified patient whilst also avoiding shifting blame to parents (or grandparents). Instead, causation is linked to etiological factors in the environment. Parents do the best they can for their children with the physical and psychological resources they have. It is important for health care providers to support families in understanding trauma. Blame serves to undermine relationships, which impedes family function and perpetuates the problem.

In this age, where psychiatry remains reliant on descriptive rather than etiological classifications, traumatic stress is one of the few psychiatric diagnoses with clear causation; as such, we should be thorough in identifying or ruling out its presence.

**Take Home Summary**

When faced with unclear diagnoses, complex comorbidities or treatment resistance, consider historical trauma in the patient’s family. The assessment of intergenerational trauma lies in highly detailed family history. Systemic and relational psychotherapies are the main treatment options.

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**About the Author**

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Dr. Bampton thanks all those who have given their input on this paper, especially those in Queensland, New South Wales, and Auckland.

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The Attachment, Regulation, and Competency (ARC) Framework in the Treatment of Traumatized Youth

Yun Feng, MD, Julie C. Price, LCSW

Clara is a 16-year-old adolescent female who was removed from parental care at age 4 following extreme neglect and physical abuse by her primary caregivers. Previously, an older sibling was removed and placed into foster care. Constant psychiatric crises due to mood dysregulation and behavioral disinhibition prevented reunification or alternative family placement. As a result, and over the course of a decade, Clara transitioned through all levels of care in the child welfare and mental health system, including inpatient hospitalization, residential care, multiple group homes, therapeutic foster care, and partial hospitalization. During her journey, she continued to experience different forms of trauma, including sexual and physical abuse, neglect, unstable caregiving, and a significant number of restraints and seclusions.

Clara’s case is by no means a solitary or rare event. Child maltreatment has become a serious public health concern with significant consequences for affected children, families, and society as a whole. Records from the US Department of Health and Human Services (HHS) indicate that approximately 674,000 children have been victims of abuse and neglect in 2017. It led to almost 5 fatalities every day, with 71.8% of the identified victims under 3 years of age.1 Per Data from Adoption and Foster Care Analysis and Reporting System, 442,995 children were in foster care in 2017,2 which unfortunately does not guarantee a child’s safety. HHS, who acknowledged issues concerning limited data availability and underreporting,3 revealed that up to 3.07% of children in states across the country underwent maltreatment while in foster care in 2016.

Children with stories like Clara’s are exposed to “developmental traumas” in the form of interpersonal adversity that are often re-experienced during critical developmental periods. Developmental trauma survivors typically present with altered attributions and expectations, in addition to having impaired regulation skills in response to trauma cues. Over time, these behaviors negatively impact their normative development and social functioning.4 Although symptom overlap exists, formal posttraumatic stress disorder, which is often times the consequences produced by trauma of episodic and life-threatening nature, does not accurately capture the specific symptoms associated with developmental trauma survivors. As a result, “Developmental Trauma Disorder” was proposed by the National Child Traumatic Stress Network in an attempt to clearly define specific symptoms of this disorder and to serve as a guide to designate appropriate interventions.

A number of federal, state, and local initiatives have been focusing on building capacity to deliver trauma-informed care to serve maltreated children. The Attachment, Self-Regulation, and Competency (ARC) framework is one highly utilized model that provides multidimensional care for childhood traumatic stress. It is a component-based framework generated to address three core domains of intervention: Attachment, self-regulation, and developmental competencies.5,6 Conceptualized as ten core targets of intervention as described in Table 1, ARC can be used as a clinical framework to guide treatment intervention, as well as an organizational framework to integrate different treatment modalities, such as psychotherapy, psychoeducation, and milieu practices.

As emphasized in ARC, a secure attachment between a child and their early caregiver(s) is vitally important to their psychological wellbeing. Failures in early attach-
<table>
<thead>
<tr>
<th>Module</th>
<th>Component</th>
<th>Explanation</th>
<th>Clinical Implementation</th>
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<tbody>
<tr>
<td><strong>Attachment:</strong> Aims to build a safe and healthy relationship between children and their caregiving systems</td>
<td>Caregiver Affect Management</td>
<td>Building caregiver’s capacity to manage and modulate their own emotional response</td>
<td>Building self-monitoring skills; Developing affect-regulation strategies; Establishing a support system for caregivers</td>
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<td></td>
<td>Attunement</td>
<td>The capacity of caregivers to accurately read children’s cues and respond appropriately</td>
<td>Becoming children’s “feelings detectives”; Reflective listening skills; Dyadic attunement exercises</td>
</tr>
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<td></td>
<td>Consistent Response</td>
<td>Children do better when they have a clear understanding of rules and when there is a degree of predictability</td>
<td>Caregiver training to improve the ability to respond in a consistent and appropriate manner to both positive and negative behaviors</td>
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<td>Routines and Rituals</td>
<td>Traumatized children may invest a significant percentage of their energy in maintaining vigilance toward ongoing or perceived danger. Routines and rituals can provide a sense of coherence and predictability</td>
<td>Building home and milieu routines; Building routines into therapy sessions</td>
</tr>
<tr>
<td><strong>Self-Regulation:</strong> Improve children’s ability to regulate physiological, emotional, behavioral, and cognitive experiences, which can be significantly impacted by trauma</td>
<td>Affect Identification</td>
<td>Children who experience early trauma often learn to disconnect from their emotional and physical experience. Affect identification helps them to improve awareness and understanding of internal states</td>
<td>Building a feelings vocabulary; Use both formal and informal exercises</td>
</tr>
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<td></td>
<td>Modulation</td>
<td>Help children maintain optimal levels of arousal and to expand their “comfort zone” in order to tolerate a range of emotional experiences</td>
<td>Understanding degrees of feeling; Understanding comfort zone and effective modulation; Building a feelings toolbox; Exercises to modulate arousal; Alternating-states regulation strategies</td>
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<td></td>
<td>Affect Expression</td>
<td>Safely and effectively express internal experience with others</td>
<td>Identifying resources for emotional expression; Effective use of verbal and nonverbal communication skills</td>
</tr>
<tr>
<td><strong>Competency:</strong> Build both internal and external resources, which allows ongoing healthy development and positive functioning</td>
<td>Executive Function</td>
<td>Work with children to act instead of react, by using higher-order cognitive processes to solve problems and make active choices</td>
<td>Vehicles for these skills are problem-solving skills</td>
</tr>
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<td></td>
<td>Self-Development and Identity</td>
<td>Support children in exploring and building an understanding of self and personal identity</td>
<td>Building unique self, positive self, coherence self, and future self</td>
</tr>
<tr>
<td><strong>Trauma Experience Integration:</strong> Actively explore, process, and integrate historical experiences into a coherent and comprehensive understanding of self</td>
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<td>Integrating fragmented self-states; Processing specific memories and experiences</td>
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ment can have a profound and enduring impact on a child’s basic sense of safety within relationships and in the world.⁷ Due to safety concerns as a result of serious parent-child conflicts, mental illness, and behavioral problems, many children are subsequently placed in alternative care systems like foster homes, group homes, and residential care. Despite best intentions to protect children, these systems may be deficient in continuity, predictability, and stability, and can in turn become another source of threat, pain, and add more layers of developmental trauma.

Bolstering secure attachment with severely traumatized youth like Clara can be particularly challenging. Children whose earliest relationships are characterized by neglect, abuse, and abandonment may lack a model for healthy relationships. Clara remains superficially friendly at baseline, though maintains an internal hyper-vigilance that can trigger fight-or-flight mode,⁸ making her seemingly unapproachable for therapeutic work at times.

Regulation-skills training is proposed in ARC as a strategy to build a solid foundation before proceeding to trauma-processing work. For children like Clara with severe trauma, accessing their internal experience through traditional psychotherapy can leave them feeling too vulnerable and subsequently risk progress through a stage-wise healing process. Clara, for example, struggled to tolerate feelings triggered by the subtlest trauma cues. She not only refused to participate in therapies in a meaningful way, but also would abruptly leave conversations or activities that made her feel threatened. Fragmentation, disconnection, regression, and severe aggression, which were observed in the context of “accidently” disclosing sensitive inner experiences, had become her survival model.

Inspired by Blaustein and Kinniburgh’s experience in treating youth with histories of developmental trauma,⁹ enhancing youths’ capacities at age-appropriate levels was proposed as a primary intervention target while implementing ARC principles in treatment. In the case of Clara, a golden opportunity presented itself when her treatment team discovered her great interest and exceptional skill in baking. With proper guidance and assistance, she harnessed her passion to create a small baking business that thrived. She communicated with professionals and learned new baking techniques to advance her skillset. She collaborated with several agencies to obtain a photo identification, a tax identification, and to open a bank account, creating a business that profited $1,000 in the first 6 months.

Her engagement in a baking venture inspired all aspects of her treatment. As commonly seen in youth who endure significant trauma in early childhood, Clara held a distorted and negative self-image, viewing her future “in jail,” “homeless,” and having no children. Discovering her talent in baking accessed important cognitive problem-solving skills that ultimately built a more positive, hopeful self-image. The feelings of anger, sadness, and discouragement triggered by the obstacles and setbacks during the process served as “grist for the mill” to practice regulation skills. Through opportunities to interact with a range of people in different contexts, she was able to improve communication skills and enhance interpersonal relatedness.

The positive outcomes achieved in Clara’s treatment illustrate the potential of tapping into severely traumatized youth’s inner strength to build a developmentally appropriate taskforce to serve as an anchor for treatment. Engaging in tasks aimed at building competency not only enhances youth’s problem-solving skills, but also builds a positive identity that serves as a respite from the harm and suffering experienced during early childhood. Through exercising principles of “Competency”, “Regulation” training can be effectively integrated into treatment to facilitate an increase in awareness of feelings, tolerance of unwanted emotions, and expression of inner experience. While advancing through ARC core treatment domains from “Competency” down to “Regulation” and “Attachment”, it is worth exploring the ideal attachment target for youth who have been institutionalized for long periods of time, who have no consistent interpersonal relationships or freestanding attachments. Although the attachment to providers and institutions developed during treatment
can be valuable, they are not sustainable long-term relationships. Against this backdrop, success achieved through ARC treatment bolsters secure attachment.

**Take Home Summary**

In some youth with severe developmental trauma, it can be a challenging task to bolster secure attachment or to implement regulation-skills training. Tapping into their inner strength to build a developmentally appropriate taskforce can serve as an anchor for treatment.

**References**


**About the Authors**

**Yun Feng, MD**, is an assistant professor of clinical psychiatry at the Yale University School of Medicine, New Haven, CT. She is interested in Mood Disorder, Autism Spectrum Disorder, and trauma-informed care.

**Julie Price, LCSW**, is a licensed clinical social worker, and a full time employee for the State of Connecticut’s Department of Children and Families. She is a clinician at the Albert J. Solnit Children’s Center with an interest in developmental trauma and trauma-informed care.

**Disclosure:** Dr. Feng and Ms. Price report no biomedical financial interests or potential conflicts of interest.
Check out AACAP’s expanded **Depression Resource Center**, with up-to-date resources on depression helpful to parents, youth, and clinicians, including FAQs, fact sheets, treatment resources, books, apps, videos, websites, articles, and more!

[www.aacap.org/depressionrc](http://www.aacap.org/depressionrc)

Plus, with your member access to *Child and Adolescent Psychiatric Clinics of North America*, read the issue on **Depression in Special Populations**!

This special issue starts with a preface by Karen Dineen Wagner, MD, PhD, President, AACAP, and Warren Y.K. Ng, MD, and include 18 articles on depression written by a collection of over 50 AACAP members!

The release of these important resources coincides with the current Presidential Initiative on **Depression Awareness and Screening in Children and Adolescents** of Karen Dineen Wagner, MD, PhD.

Thank you to AACAP’s Presidential Task Force, Consumer Issues Committee, and Web Editorial Board for the expertise they contributed in these projects!

You can access the special issue on [www.aacap.org](http://www.aacap.org).
Menstrual Psychosis and the Workup of New-Onset Psychosis in a Teenager

Jonathan T. Heinzman, MD, and E. Taylor Buckingham, MD, MPH

A 14-year-old female with a history of attention-deficit/hyperactivity disorder (ADHD) and mild intellectual disability presented with 1-3 weeks of paranoid delusions, reduced appetite, decreased psychomotor activity, and a flat affect. After a negative workup for metabolic, endocrine, and toxicity causes she was psychiatrically hospitalized for one week and discharged on risperidone. Although she responded well, she presented again 3 weeks later for social withdraw, agitation, low oral intake, and presumed auditory and visual hallucinations. She had a fever to 102°F, tachycardia, hypertension, urinary incontinence, and had not spoken for 3 days. She stopped risperidone and was switched to lorazepam for concerns for neuroleptic malignant syndrome (NMS). She had little improvement in symptoms on lorazepam, and she had both a normal creatine kinase and no muscle rigidity. Workup for bacterial and viral encephalitis/meningitis was negative and she was presumed to have anti-NMDA receptor encephalitis. She began IVIG and IV methylprednisolone and responded well within 5 days. Antibodies for the NMDAR and voltage-gated potassium channel were then negative. As her symptoms had mostly resolved (except for persistent flat affect) and there was previous concern for NMS, she was discharged without medications. She returned a third-time, three weeks later for social withdrawal, flat affect, agitation, low oral intake, and concern for hallucinations. During the third hospitalization the patient’s mother noticed she could predict her daughter’s menstruation as these symptoms preceded menstruation for the last three months. Although the patient initially presented approximately 1 year after menarche at age 14, she had previously had monthly, regular menses lasting 5-6 days. She was diagnosed with menstrual psychosis, and her treatment included starting both leuprolide and norethindrone/ethinyl estradiol combined with low-dose haloperidol. Her symptoms significantly improved, and she has had no hospitalizations for nearly 4 years.

Psychosis and Early-Onset Schizophrenia

Prevalence estimates for psychotic symptoms in young patients cover a wide range, with a Swedish study estimating that 40% of psychotic symptoms in patients 13-18 years old are caused by early-onset schizophrenia. However, the prevalence of psychosis at 13 years old was one per 10,000 and 17 per 10,000 at 18 years old. Other studies have estimated the prevalence of early-onset schizophrenia (schizophrenia before age 18) at approximately 0.5%. Furthermore, studies of early-onset schizophrenia have found an equal gender ratio, as opposed to the predominantly male diagnosis of schizophrenia in adults.

The clinical manifestations of early-onset schizophrenia can be varied, but the most common findings are prodromal symptoms. These can include developing deficits in attention, reading and language learning, and socialization. While not specific for schizophrenia, studies have also shown that approximately 33% of youth with schizophrenia have a decline in their IQ to below 70 during the prodromal phase. Social withdrawal and worsening academic performance typically occur very gradually and begin over a year before psychotic symptoms. It can be difficult to identify prodromal symptoms, because the decline occurs gradually and the symptoms can mirror many other psychiatric conditions.

Evaluating Psychosis in Young Patients

The differential diagnosis of psychosis in young patients is broad. Figure 1 shows a suggested approach to evaluating psychosis.
When evaluating psychosis, it is helpful to consider primary versus secondary psychosis. Primary psychosis is due to a psychiatric etiology, such as schizophrenia, and secondary psychosis is due to a medical or substance use etiology. Both are life-threatening and reversible. For acute psychosis one can check blood glucose and vital signs to quickly evaluate for secondary causes, such as hypoglycemia, signs of infection such as fever, serotonin and neuroleptic malignant syndrome with fever, tachycardia, and hypertension. Another common cause of an acute secondary psychosis is substance use or overdose. While a blood alcohol level combined with a urine drug screen can identify many intoxications, cutaneous vasodilation, dry
skin, and pupil dilation can point towards less common intoxications that may not be captured in a drug screen, such as anticholinergics like diphenhydramine.

If the diagnosis is still uncertain, further workup could include CT/MRI brain imaging, to look for tumor, abscess, stroke, or hemorrhage, and an EEG can be obtained if there are concerns for seizures. Further lab testing may be warranted based on clinic presentation. If there is ataxia and macrocytic anemia, then it could be B12 deficiency. If there is peripheral neuropathy and gastroenteritis, then it could be heavy metal toxicity. If there is cerebellar ataxia, chorea, and dysarthria, it could be mercury toxicity. Finally, if there are signs of liver disease or eye findings, it could be Wilson’s disease. Other less common etiologies include both steroid- and anticonvulsant-induced psychosis, and the less-known etiology of menstrual psychosis.

**Menstrual Psychosis**

Menstrual psychosis was first observed in the 18th century, but since that time it has been described as a “forgotten disorder.” A review by Brockington identified 27 confirmed cases, based on detailed case report history on the onset of menses and psychosis. The review also identified 80 likely cases, based on case reports with retrospective history from relatives without optimal dating of menses and psychosis onset. The majority of the cases were reported in the early 1900s. It is unclear why the number of cases in the literature decreased, however, it is likely a combination of both historical over diagnosis and current under diagnosis. Although literature on the prevalence is limited, an 1888 study found 1 case in 1,000 admissions, while recent studies estimate a prevalence of 1 in 10,000. No hormonal studies have been conducted and no genetic risk factors have yet been identified, likely due to the “forgotten” nature limiting the number of investigations into the disorder.

Menstrual psychosis is characterized by an acute onset without prodromal symptoms, brief duration with full recovery, psychotic features, and a menstrual/monthly periodicity that has repeated at least once. It appears related to the pituitary-ovarian axis, as has been correlated with anovulatory cycles. To better understand this connection, a brief review of the menstrual cycle is warranted. The menstrual cycle begins with declining estrogen and progesterone inducing menstruation. Follicle-stimulating hormone (FSH) then causes ovarian granulosa cells to secrete estrogen. Estrogen stimulates uterine endometrium proliferation. When estrogen peaks, it induces the LH surge, causing ovulation. The corpus luteum (post-ovulatory follicle) then produces progesterone. Without fertilization, both estrogen and progesterone levels drop and menstruation begins.

Although menstrual psychosis has been classified by both the timing and stage of reproduction life, only the timing classification is prevalent in the literature. Premenstrual psychosis is defined as symptoms starting during the second half of the menstrual cycle. Catamenial psychosis is defined as symptoms starting with the onset of menstruation. Paramenstrual psychosis is defined as symptoms with variable timing to the menstrual cycle. Epochal menstrual psychosis is characterized by a bipolar-like psychosis lasting the complete cycle with menstruation linked to switches between depression and mania.

Catamenial psychosis was the subtype diagnosed in the patient case described above. Although the psychotic symptoms may look similar to that of schizophrenia or depression, the return to baseline between episodes, and monthly episodes can help differentiate menstrual psychosis from schizophrenia. Furthermore, there is typically no prodromal phase, as the psychosis begins abruptly—typically soon after menarche. The diagnosis is difficult to make as there are no tests, screens, or associated risk factors.

The treatment of the menstrual psychoses is aimed at the menstrual cycle, which is the underlying cause of the psychosis. Treatment has been focused on both hormone replacement and suppression of the menstrual cycle, along with antipsychotics during the acute psychosis phase. Hormone replacement therapy includes using the GnRH agonist leuprolide with “add-
Menstrual psychosis is a rare disorder with a crudely estimated prevalence of 1 in 10,000. Despite the prevalence indicating many women suffer from the disorder, the literature is limited to 80 suspected cases. Further research is needed to describe most aspects of the disorder, including prevalence, pathophysiology, genetic risk, and evidence-based therapies. Education on menstrual psychosis should also be increased as it is likely being missed clinically. Increased identification is important as the treatment is effective, safe, and much different than that of early onset schizophrenia.

Take Home Summary
Further research and education into menstrual psychosis is important given the “forgotten” nature of the disease. Increased awareness will improve patient care through accurate diagnosis and effective treatment with leuprolide and oral contraceptive pills.

References

About the Authors
Jonathan T. Heinzman, MD, is a first-year resident in psychiatry at the University of Iowa Hospitals and Clinics, Iowa City, IA. He is interested in child and adolescent psychiatry and consult-liaison psychiatry.

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The authors extend a special thanks to Dr. Hanna Stevens, MD, PhD, of the University of Iowa, for helpful comments throughout the writing process.

Disclosure: Drs. Heinzman and Buckingham report no biomedical financial interests or potential conflicts of interest.
AACAP AWARD SPOTLIGHT:
Eraka Bath, MD

The NIDA-AACAP K12 award is funding my research project which aims to better understand the processes that affect engagement and retention of judicially-involved youth with histories of commercial sexual exploitation in drug and mental health treatment; to determine the acceptability and feasibility of mobile health text-messaging to facilitate engagement in court-referred programming (mental health and substance use treatment); and to understand judicially involved youth with histories of commercial sexual exploitation perspectives of facilitators and barriers to engagement in health services and explore their receptivity and preferences for mobile health interventions to improve engagement in court recommended care. AACAP has been an amazing and welcoming home base and has helped me further my research career, enormously.

My professional identity as a forensic child and adolescent psychiatrist can be isolating, particularly since my home is in the juvenile courts. Serving on AACAP’s Children and the Law Committee enables me to meet and mentor trainees, as well as colleagues who are interested in forensics. Bi-directional mentoring has also been beneficial. Mentoring others and receiving mentoring from senior faculty has been extremely rewarding. Moreover, I enjoy being able to “crash” other committees including Diversity and Culture, Adoption and Foster Care, as well as Child Maltreatment and Violence. AACAP has a commitment to diversity and there has been an effort to have better representation in the area of equity diversity and inclusion in programming and leadership.

WORKFORCE IMPACT
I have mentored numerous award candidates, junior faculty, and multi-disciplinary trainees in need of career and professional development advice. Now, as I am solidly in the mid-career zone, most of my time at the AACAP Annual Meeting is spent huddled in various corners, mentoring a cadre of trainees and junior faculty. I love it!
AACAP’s Legislative Conference and Assembly Meeting
April 2 - 4, 2020

AACAP’s 2020 Legislative Conference and Assembly Meeting will take place in Washington, DC, from April 2 - 4, 2020. Join us for both events to advocate for children’s mental health.

**AACAP Legislative Conference**

On April 2 - 3, AACAP’s Government Affairs team will teach you about the legislative process, provide you with advocacy materials to help you develop and deliver the most impactful messages, and schedule your meetings with legislators on Capitol Hill. Join us as we advocate for children’s mental health, and make your voice heard!

Visit [www.aacap.org/LegislativeConference](http://www.aacap.org/LegislativeConference) for more information or contact Harry deCabo, Advocacy & PAC Manager, at hdecabo@aacap.org or 202.587.9669.

**AACAP Assembly Meeting**

On April 4, AACAP’s Assembly of Regional Organizations will meet to discuss the issues facing your state and region. The Assembly consists of AACAP member representatives from across the nation and is always looking for more voices and advocates like you to join the discussion.

Visit [www.aacap.org/Assembly](http://www.aacap.org/Assembly) for more information or contact Megan Levy, Executive Office Manager, at mlevy@aacap.org or 202.966.1994.
CLiPPs: A Review of Delirium in Children After Cardiac Bypass Surgery


Reviewed by: Amanda Schlesinger, MD, PGY-5, Boston Children’s Hospital, Boston, MA.

Background and Objectives: Delirium is a frequent complication of cardiac bypass surgery in adult and pediatric populations, with one recent prospective study finding delirium in 30% of an adult cohort after bypass surgery. However, there have not been systematic studies of incidence of delirium after bypass in a pediatric population, impacting the ability to recognize risk factors and develop prevention strategies. This prospective, observational study was designed to describe the incidence in a single pediatric cardiothoracic ICU (PCICU).

Methods: Patients were eligible if under 21 years of age and admitted to the PCICU after cardiothoracic surgery with bypass pump usage. 194 patients ranging in age from 1 day old to 21 years old screened once per nursing shift with the Cornell Assessment of Pediatric Delirium (CAPD) instrument by nursing staff trained in the instrument. Patients were not scored if they were comatose and unarousable to verbal stimuli. Developmentally delayed patients were scored as delirious if their CAPD score >9 and neurological functioning was not at baseline. Baseline patient characteristics and intraoperative variables were also measured.

Results: 49% of patients in the sample experienced delirium during their PCICU stay. 1342 patient-days were scored and 1.4% of days were not scored due to missed screenings. Patients experienced a mean of 2 delirious days. Delirium was most often detected on days 1-3 post-operatively. Baseline risk factors associated with development of delirium were: age <2 years, cyanotic heart disease, developmental delay, albumin <3 mg/dL (used as a marker of poorer nutritional status), higher RACHS-1 (Risk Assessment for Congenital Heart Surgery) score, and above-median PIM-2 (Pediatric Index of Mortality 2) score. Clinical factors associated with delirium were: longer bypass time, coma during PCICU stay, physical restraints, use of opiates or benzodiazepines for sedation, and need for respiratory support or vasopressors. A 60% increase in PCICU length of stay was associated with delirium.

Conclusion/Commentary: The study cohort developed delirium at rates similar to adult populations, demonstrating that children undergoing cardiopulmonary bypass are highly susceptible to development of delirium, and universal screening and prevention should be considered. Findings point to preoperative vulnerabilities as a significant contributor. A limitation that may have decreased detection of delirium was that daily assessments did not assess patients overnight suggesting under-capturing of delirium rates in this population. While causality was not established, identified delirium risk factors may be candidates for interventional studies. This was a single-institution study and the authors suggest that a multi-center prospective study should be conducted to replicate these findings.
Take Away
This prospective study showed half of its patients undergoing cardiac bypass developed delirium, which was correlated with a significant increase in length of stay. Several demographic and clinical variables were associated with delirium that warrant scrutiny in risk assessment. Moreover, this study provides compelling data showing need for more awareness of and screening for delirium in a subspecialized patient population. More subspecialty delirium studies should be done to increase awareness and reduce complacency in our medical colleagues.

This article review originally appeared in the CLiPPs Winter Holiday 2017 Edition.

References

CLiPPs: Hydrocortisone as an Intervention for Dexamethasone-Induced Adverse Effects in Pediatric Patients with Acute Lymphoblastic Leukemia (ALL): Results of a Double-Blind, Randomized Controlled Trial


Reviewed by: Meredith MacGregor, MD, Memorial Sloan Kettering Cancer Center

Background: Corticosteroids, including dexamethasone, are integral to the treatment of leukemia in children. Neuropsychological adverse effects of these medications can significantly impact quality of life in ALL and potentially put patients in danger of physical harm. Previous studies have found benefit of anti-psychotics or benzodiazepines in mediating these effects, but these medications are not always effective and carry risk of potentially harmful side effects. The authors of this study cite recent research elucidating the pathophysiology of dexamethasone-related neuropsychological adverse effects. Specifically, that dexamethasone-induced cortisol depletion of the mineralocorticoid receptor in the brain may be the cause of these symptoms. They designed this double-blind, randomized controlled trial with a crossover design to test the utility of hydrocortisone as a treatment for some of the adverse neuropsychological and metabolic adverse effects of dexamethasone in pediatric leukemia patients.

Methods: Eligible patients were 3-16 years old, diagnosed with ALL, being treated on a medium-risk protocol (Dutch Childhood Oncology Group ALL-10 or ALL-11) that included 5-day dexamethasone pulses during the maintenance phase of treatment. The study interval included two sequential courses of dexamethasone and patients were randomly assigned to receive hydrocortisone during either the first or the second course of dexamethasone and placebo in the other. Hydrocortisone was dosed based on body surface area three times a day: 5, 3, and 2mg/meter squared. The primary outcome measure was the Strengths and Difficulties Questionnaire in Dutch (SDQ-Dut) which has 5 subscales: emotional symptoms, conduct problems, hyperactivity and inattention, peer relationship problems, and prosocial behavior. Patients were also monitored with questionnaires to track sleep, eating behavior, and physical activity, and completed neurocognitive tests on the first and last day of the steroid course. Physical monitoring included height, weight, waist-hip circumference, blood pressure, and blood work (lipid profiles, glucose, and insulin).

Results: There were no adverse effects that were attributable to hydrocortisone in either group. 46 patients completed the questionnaires at all 4 time points and 16 had a “clinically relevant” increase in psychosocial difficulties, which was defined as an increase of 5 in their
SDQ-Dut total difficulties score. In these 16 patients, the authors found that hydrocortisone had an effect on the total difficulties score, bringing the score at the end of the dexamethasone course to within a normal range. Similarly, hydrocortisone did not improve sleep rating scores overall, but in the subset of patients who had clinically relevant sleep disturbance with dexamethasone, the addition of hydrocortisone decreased the severity of this disturbance. Hydrocortisone did not have any effect on the physical parameters that they were monitoring.

**Conclusion/Commentary:** This study confirms past research that not all patients are equally impacted by adverse effects of corticosteroids. The findings suggest that those patients who are more affected may benefit from physiologic doses of hydrocortisone, a treatment without significant side effects. The fact that hydrocortisone did not improve metabolic adverse effects of hydrocortisone and suggest that these effects may have a different pathophysiology – an idea that could also inform further studies to help better understand the mechanism of the adverse effects of corticosteroids. The authors recommend further study focused on patients with symptoms related to dexamethasone to confirm effects of this intervention. However, the study did not include a discussion of the most severe neuropsychiatric effects – acute mania or psychosis – and when a trial of hydrocortisone could still be considered in these patients in addition to or instead of an antipsychotic. Finally, this study included only patients who were being treated on medium-risk protocols. Patients treated on high risk protocols receive more neurotoxic agents as well as higher and more frequent dosing of dexamethasone, so it is unclear if hydrocortisone would be useful in management of neuropsychiatric side effects in these patients.

**Take Away**

Hydrocortisone seems to be a low-risk intervention that may alleviate some of the neuropsychiatric side effects of dexamethasone and could have the potential to improve quality of life in children and adolescents being treated for some types of leukemia. However, more studies are needed and it is unclear if there is a role for this medication in patients who develop severe neuropsychiatric side effects.

This article review originally appeared in the CLiPPs Late Spring 2018 Edition.

**References**


**CLiPPs: Self-Management Measurement and Prediction of Clinical Outcomes in Pediatric Transplant**


**Reviewed by:** Alison Manning, MD, Duke University Medical Center

**Background:** It is well established that the period of transition from pediatric to adult healthcare is a time of vulnerability associated with declines in adherence and morbidity. It has been theorized that enhancing patient self-management skills may improve compliance and facilitate healthcare transition thus leading to improved clinical outcomes. The Responsibility and Familiarity with Illness Survey (REFILS) is a checklist of skills that has been used to quantify and track self-management levels over time. It demonstrated reliability and validity in single site studies but has lacked correlation...
with medical outcomes. The authors of this multi-site, prospective cohort study sought to further develop the REFILS through correlation with biological and clinical measures to evaluate association with non-adherence and rejection in pediatric liver transplant recipients.

**Methods:** Participants were 400 children ages 1-17 years and their families from 5 pediatric liver transplant centers enrolled in The Medication Adherence in Children Who Had a Liver Transplant (MALT) cohort. They were followed for 2 years, and the REFILS was administered to dyads at baseline in patients 9 years of age or older and their parents. A total score as well as a “discrepancy” score (the difference between patient and parent reports of patient’s self-management) were calculated.

The REFILS examines two self-management domains in patients and parents’ perceptions about their children: perceived knowledge about illness, and responsibility for medical management. Higher scores equal greater reported self-management. Medical outcomes were measured using the Medication Level Variability Index (MLVI) which is the degree of variation in blood levels of the patients’ primary immunosuppressive agent, Tacrolimus. A higher MLVI denotes more fluctuation in levels and more erratic adherence. The main clinical outcome was biopsy-defined rejection as determined by 2 independent pathologists.

**Results:** 213 parent-patient dyads completed the REFILS. There were no significant associations between any demographic variables and scores except for parent level of education. REFILS scores increased with patient age as expected. Patients who reported greater self-management had lower adherence ($r=0.26$, $P<.01$). Greater discrepancy between patient and parent report was associated with lower adherence; when patients endorsed higher levels of self-management than their parent reported for them, it was associated with higher MLVI poorer adherence ($r=0.20$, $P<.01$). Patient REFILS scores predicted non-adherence and future rejection (26.1 (SD 4.2) vs 23.7 (SD 4.8)). Discrepancies between patient and parent report were larger for those who experienced rejection (1.6 (SD 4.2) vs 0.01 (SD 4.2)).

**Conclusion/Commentary:** Patients who reported a higher degree of self-management had worse clinical outcomes. This study echoes other pediatric transplant literature cautioning the transition of responsibility from the parent/caregiver to the patient may be ill-advised if poorly timed, and that a gradual and thoughtful transfer of accountability is essential and must be individualized.

Greater discrepancy between child/adolescent and parent self-management scores was also associated with poor adherence and rejection and is a novel approach to evaluating transition readiness. This discrepancy may reflect a basic level of communication discord in the home which is known to negatively impact adherence. This measure may be a useful tool to facilitate and inform conversations about adherence and allocation of caregiver and patient responsibility. This paper highlights why adolescent self-report must not be taken as the sole indicator of adherence and readiness for transition.

**Take Away**

The REFILS may be a useful tool to aid in recognizing patients at risk for poor adherence and transplant rejection, and to prompt conversations between providers and parent-child dyads about the importance of continued parent involvement and thoughtful transition of responsibility. Patient reports of high self-management and parent and child discrepancies between the child’s self-management may be helpful warnings about the need for intervention in adherence and prevention of transplant rejection.

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**References**

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