Aging Well with Autism

Carol Orth embraces a stuffed turtle that vibrates as she grasps it tighter. It’s just one of the props the psychotherapist and clinical supervisor of the Johns Hopkins Adult Autism and Developmental Disorders Center encourages patients with autism spectrum disorder (ASD) to pick up when they feel agitated. Murals with beach scenes offer calm. Whiteboards encourage interaction during therapy sessions. Reams of Bubble Wrap entice clients to pop plastic mounds to release tension.

Demand for services such as these at the spacious new outpatient facility adjacent to the Johns Hopkins Bayview Medical Center campus continues to rise, given the increasing prevalence of ASD among children: 1 in 59—versus 1 in 166, in 2011. Yet little is known about ASD in adults, a population that continues to grow as these children age and need additional psychiatric and medical care over time.

Now, a new longitudinal study on aging and ASD led by Johns Hopkins clinicians looks at co-occurring illnesses and behavioral and neuropsychiatric symptoms that arise with advancing age.

The retrospective study, which analyzed data collected between 1981 and 2015, is the first to have a relatively large sample size (74 individuals age 30 and older), says geriatric psychiatrist Elizabeth Wise, who co-authored the report with Peter Rabins, former director of the Division of Geriatric Psychiatry and Neuropsychiatry; and Marcia Smith, a local psychologist. The study, published in the *Journal of Autism and Developmental Disorders*, focuses on a sample of adults who have been part of the same community program—offering early intervention and support—for 20 to 35 years.

The research focused on these clients’ medical, behavioral and neuropsychiatric symptoms during that time. At least three-quarters of the participants have some degree of language impairment, and almost a third needed an oral sedative before medical or dental appointments. More than three-quarters have intellectual disability.

“I think it’s a sign that we highlighted a pretty impaired group of people,” says Wise. Still, the prevalence of challenging behaviors, including self-injury, aggression and wandering, declined significantly. “Whether it was through medication or behavioral programs, we found that behavior problems can be reduced over time.” Twenty years ago, 90 percent engaged in one or more challenging behaviors, compared with 52.7 percent in 2015, says Wise.

Many of these approaches are also underway at Hopkins Bayview’s adult autism center and have proven successful in easing symptoms. Dozens of patients with ASD have been coming to the clinic since the 1990s. Some were initially diagnosed as children at Kennedy Krieger Institute, which has long-standing ties to Johns Hopkins. “It’s been really rewarding to watch these individuals transform over time,” says Orth.

“What sets us apart,” she says about the center that serves some 300 patients, “is that the people we work with have an autism disorder and are treated for mental illness and disability. It’s a very complex picture.” In addition to psychotherapy, medication management and psychosocial rehab, the center offers specialty clinics for schizophrenia, substance use disorder and anxiety. Resources are also available to family members.

Caring for Patients Across the Spectrum

The need for tactile and sensory stimulation is heightened in people with ASD, says Orth. So, it’s not uncommon for her to throw a ball back and forth to a person with ASD—even during an initial meeting with a family. “It’s a nonthreatening way to connect with them and offers them sensory stimulation in the areas of sight, sound and touch,” she says. In small group meetings, people with ASD discuss such things as how to handle an interview or other new situation.

Wise notes that adults with ASD often have severe symptoms, such as aggression and self-injury, that can persist. And recent studies, she says, show that most adults with ASD live in supervised accommodations with fair to poor social outcomes. Few are employed full time, and there’s great demand for more services for aging adults on the spectrum.

But many adults with ASD, says Wise, are highly intelligent and accomplished. She and
FROM THE DIRECTOR

Advances and Triumphs

As I embark on my second year at the helm of our Department of Psychiatry, I find myself reflecting on the progress that we’ve shared together—growth both great and small—just completed in the department.

We launched another stellar crop of interns in new training programs. An impressive several of our interns from previous years have published first-author papers, indicating an academic orientation. An important change we have set in motion is the creation of academic tracks in internal medicine, toxicology, and public health. The idea is to provide mentorship, enrichment, and academic opportunity in each of these areas. These changes will help us attract the most talented medical students entering the field. You’ll read more about the launch of these new tracks in this issue.

Elizabeth Wise

FROM THE DIRECTOR

BIPOLAR DISORDER RESEARCH

Processed Meats and Mania: A Connection?

A study published in the journal *Molecular Psychiatry* describes a specific connection between the consumption of processed meats and the development of bipolar disorder. Researchers led by American College of Psychiatrists member Seva Khambadkone, Ph.D. student, and Hopkins neurovirologist Ben Lee, former head of the Department of Psychiatry at the University of Rochester Medical Center, conducted experiments on laboratory animals.

The research team set up three experiments. First, they fed some rats regular rodent chow, and other rats the same chow plus one piece of store-bought beef jerky every other day. “We were surprised to see that within two weeks, rats eating the jerky were hyperactive compared to our control rats,” said Khambadkone, noting that control rats, when rats were in their regular cages or exposed to a novel environment, did not show hyperactivity.

A third experiment divided rats into three groups, with one getting standard chow, one getting custom-made chow laced with beef protein, and a third getting custom-made chow formulated with beef protein and sodium nitrate. Once again, the rats consuming nitrate were more hyperactive than the others in both their normal and novel environments.

“The notion is this will increase the likelihood that neurons will be recruited to fire in response to cognitive stimulation,” said Vannordstall. “It’s a very challenging task, but it’s adaptive. If patients are facing adversity, the task gets simplified. Once they reach a level of success, it goes up a degree of difficulty.”

Prior studies have shown that tDCS improves working memory and reduces fatigue in multiple sclerosis patients. For example, a study involving two or three times back in the sequence. They found that neurons underlying the electrodes will fire in response to cognitive stimulation. TDCS—will increase the likelihood that neurons will fire in response to cognitive stimulation.”

Across all three experiments, the researchers observed that rats consuming nitrate-cured meats regarding mania.

National Curriculum Aims to Fill Gaps in Reproductive Psychiatry

Throughout her residency, Lauren Osborn noticed how little training some of her colleagues were getting in reproductive psychiatry, the assessment and treatment of pregnancy-related mental health problems, including antenatal depression and anxiety, postpartum depression, and perinatal mortality. Ms. Osborn also noted that many programs lacked a comprehensive curriculum that could be taught to residents in a classroom, an issue that the Fellowship has now successfully addressed. Ms. Osborn worked with a collaborative of media experts to develop a multi-disciplinary curriculum that addresses the clinical and educational needs of residents and fellows in reproductive psychiatry.

Ms. Osborn has now worked with a multi-disciplinary team to develop a comprehensive curriculum that addresses the clinical and educational needs of residents and fellows in reproductive psychiatry. The curriculum includes topics such as the effects of antidepressants and mood stabilizers on breastfeeding, the role of depression and anxiety in the perinatal period, and the assessment and treatment of postpartum depression. The curriculum also includes a comprehensive review of the current evidence for the use of antidepressants and mood stabilizers in pregnancy, as well as a discussion of the ethical and legal issues surrounding these medications.

Ms. Osborn’s curriculum addresses a critical gap in the training of residents and fellows in reproductive psychiatry. By providing a comprehensive and evidence-based curriculum, Ms. Osborn is helping to ensure that all residents and fellows in reproductive psychiatry are well-prepared to provide the highest quality care to their patients.
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Orth recently started working with a retired surgeon with ASD, for example, who’s had trouble adjusting to the social world after leaving the workplace. In every situation, the center’s team of psychiatrists, psychotherapists and occupational therapists work in concert with the individual and/or that person’s care team to assess severity of symptoms and level of function, and to create treatment plans and interventions to meet his or her specific needs. The plan includes both individual and group sessions.

“There’s never a dull day here,” says Eric Samstad, medical director of the center, “We need to accept that we’re not going to cure anyone, but overall, we are improving quality of life.” And, though lack of engagement can be intimidating, he adds, “If you make the effort to get to know these patients, they warm up to you. They really appreciate it.”

For Orth, success comes when she’s made a connection, “or when they recognize me and feel safe—giving me a high-five, or a wave,” she says. “Tuesday afternoons are the best; the group session begins at 3, but people show up at 2 and start engaging in the lobby.”

Join Us as We Mark This Milestone

Seventy-five years ago, Johns Hopkins child psychiatrist Leo Kanner defined autism as “an innate inability” of a child to relate to those around him or her, and an “all-powerful need to be left undisturbed.” Join us as we honor Kanner’s legacy. Contact: jellio26@jhmi.edu.