

## **PSYCHIATRIC SUMMARY:**

This issue marks the eleventh installment consolidating recent clinical updates, mental health policy news, popular press news patient's may be reading, and changes in the landscape of psychiatry in Wisconsin.

## **GENERAL INTEREST:**

### *Evolution of Fairness*

Reporting on an article appearing in the same issue of Science (Brosnan and de Waal [LINK](#)), Sache Vignieri wrote:

Humans have a deep and innate sense of fairness. Humans, however, are not the only species to react to apparent inequities. Brosnan and de Waal propose that inequity aversion can be broken down into two levels. At the most basic level, individuals react to immediate unequal distribution of a reward for equal effort expended, whereas at the second, they show the ability to accept a current unequal distribution with the expectation that over time distribution will equalize. This second level facilitates cooperation over time and requires the cognitive abilities both to assess current distribution and envision future opportunities for equalization. As cognitive abilities advanced across the primate lineage, this more complex accounting of equal distribution and cooperation may have developed into the complete sense of fairness we see in humans today.

## **CLINICAL PSYCHIATRY IN THE NEWS, IN BRIEF:**

### *8 Types of Schizophrenia?*

According to heavily publicized research available on-line ahead of print at American Journal of Psychiatry [LINK](#), Arnedo et al. used three independent genome wide association studies to identify clusters of single-nucleotide polymorphisms conferring risk for schizophrenia. The authors argue that, through confirmation using two samples independent of the initial population, there are eight distinct schizophrenias, each with their own distinct genotypic network and clinical presentation.

### *Suicide in Families with ADHD*

According to a recent JAMA release ([LINK](#)): "Shared genetic factors may partly explain the increased risk of suicide among persons with attention-deficit/hyperactivity disorder (ADHD), found a longitudinal study of 51 707 Swedish patients with ADHD and their families (Ljung T et al. JAMA Psychiatry. 2014;71[8]:958-964). Heritable traits such as impulsivity play a large role in both ADHD and suicidal behavior and may explain the pattern of familial susceptibility to both, the authors said."

### *GABA/glutamate Control of Habenula in Depression:*

Work by Shabel et al. (Science 2014 [LINK](#)) posit that hyperactivity of the habenula in depression correlates with negative valence of information processing. The authors argue that this

balanced control comes from long-range basal ganglia inputs. “At this synapse, the balance of GABA/glutamate signaling is shifted toward reduced GABA in a model of depression and increased GABA by antidepressant treatment. GABA and glutamate co-release therefore controls LHB activity, and regulation of this form of transmission may be important for determining the effect of negative life events on mood and behavior.”

#### *Self Reported Memory Complaints*

In an article published in *Neurology* (Kryscio et al., [LINK](#)) a correlation was found (n=531) subjects between patient subjective memory complaints (SMCs) and later evidence of dementia: “SMCs were reported by more than half (55.7%) of the cohort, and were associated with increased risk of impairment (unadjusted odds ratio = 2.8, p < 0.0001). Mild cognitive impairment (dementia) occurred 9.2 (12.1) years after SMC. Multistate modeling showed that SMC reporters with an APOE ε4 allele had double the odds of impairment (adjusted odds ratio = 2.2, p = 0.036). SMC smokers took less time to transition to mild cognitive impairment, while SMC hormone-replaced women took longer to transition directly to dementia. Among participants (n = 176) who died without a diagnosed clinical impairment, SMCs were associated with elevated neuritic amyloid plaques in the neocortex and medial temporal lobe.”

#### *Therapy for ADHD Under-utilized*

In work published at *JAMA Pediatrics* (Gellad online ahead of print [LINK](#)) evaluation of a commercial insurance database (n>300,000) showed that, despite evidence that combined pharmacotherapy and psychotherapy provide superior treatment, only one in four children prescribed medication for ADHD have also received psychotherapy.

In a study of 452 adult outpatients, Hollon et al. (*JAMA Psychiatry* [LINK](#)) showed that among patients with severe nonchronic major depressive disorder, combined treatment enhanced the rate of recovery versus treatment with antidepressant medications alone. The number needed to treat was 10 with a 95% confidence interval of 5 to 72.

#### *Neuroticism → Alzheimer’s?*

In a 38 year population based study of midlife neuroticism in 800 women, Johansson et al. (*Neurology* [LINK](#)) showed that a “higher degree of neuroticism in midlife was associated with increased risk of AD [Alzheimer’s Disease] dementia and long-standing distress over 38 years

#### *Weightlifting for Memory:*

According to work published in *Acta Psychologica* (Weinberg et al., [LINK](#)) a single 20 minute session of resistance training improved visual recall by 10%. The authors concluded: “Our results demonstrate that a single bout of resistance exercise performed during consolidation can enhance episodic memory and that the effect of valence on memory depends on the physiological response to the exercise.”

#### *Marijuana = Neuroprotection?*

In a 3 year retrospective study of traumatic brain injury and toxicology reports, Nguyen et al. (*The American Surgeon* [LINK](#)) found that “Overall mortality was 9.9 per cent (44); however,

mortality in the THC(+) group (2.4% [two]) was significantly decreased compared with the THC(-) group (11.5% [42]; P = 0.012). After adjusting for differences between the study cohorts on logistic regression, a THC(+) screen was independently associated with survival after TBI (odds ratio, 0.224; 95% confidence interval, 0.051 to 0.991; P = 0.049). A positive THC screen is associated with decreased mortality in adult patients sustaining TBI.”

#### *Myelination for Learning?*

In a study published in Science (McKenzie et al., [LINK](#)) the authors genetically manipulated the transcription factor myelin regulatory factor in oligodendrocyte (OL) precursors, and thus “blocked production of new OLs during adulthood without affecting preexisting OLs or myelin. This prevented the mice from mastering the complex wheel. Thus, generation of new OLs and myelin is important for learning motor skills.”

#### *Dopamine Agonists and Impulse Control*

According to research published at JAMA Internal Medicine online ahead of print (Moore et al. [LINK](#)) impulse control disorders including pathological gambling, hypersexuality, and compulsive shopping were associated with dopamine agonist drugs in “a retrospective disproportionality analysis based on the 2.7 million serious domestic and foreign adverse drug event reports from 2003 to 2012 extracted from the FDA Adverse Event Reporting System..”

### **MENTAL HEALTH IN THE POPULAR PRESS:**

#### *Blood Test for Depression*

Multiple news sources reported on an article appearing online ahead of print at Translational Psychiatry (Redei et al., [LINK](#)) which linked RNA transcription factors both to depression in 32 patients with major depressive disorder compared to 32 matched controls without, with a subset of markers predicting response to cognitive behavioral therapy.

#### *Exercise Pathway to Resilience to Stress*

Publicized in the Los Angeles Times (Healy, 9/25/2014 [LINK](#)) work out of the Karolinska institute (Agudelo et al. [LINK](#)) has elucidated the biochemical pathway via “which skeletal muscle PGC-1 $\alpha$ 1 induced by exercise training changes kynurenine metabolism and protects from stress-induced depression. Activation of the PGC-1 $\alpha$ 1-PPAR $\alpha$ / $\delta$  pathway increases skeletal muscle expression of kynurenine aminotransferases, thus enhancing the conversion of kynurenine into kynurenic acid, a metabolite unable to cross the blood-brain barrier.”

#### *Exercise and Child Cognitive Abilities*

In an article appearing in the LA Times Science Now section, Deborah Netburn ([LINK](#)) reported: “In a paper published in Pediatrics, researchers report that kids 7 to 9 years old who attended a daily, after-school fitness program showed an increased ability to pay attention, avoid distraction and switch between tasks at the end of a nine-month period, compared with a control group that did not attend the program.”

### *Minnesota Drop-In Model*

According to the 10/6 AMA morning report: “The [Minneapolis Star Tribune](#) (10/6, Shah) reports on a drop-in program for mental health patients at the Hennepin County Mental Health Center in Minnesota, on “the cutting edge of a movement to deliver mental health care quickly and conveniently.” Since the program has been implemented, “the number of patients participating in mental health consultations with their therapist has gone up threefold, from 110 to 375,” and the number of psychiatric visits to emergency departments has fallen. The piece details the growing need for mental-health professionals, particularly psychiatrists, as many are retiring “without enough graduates in the pipeline.” Currently, some 91 million US adults “live in areas where a small number of mental-health professionals makes finding treatment difficult, according to the US Department of Health and Human Services.”

### *Suicide Every 13 Minutes:*

In a piece appearing in USA Today (Zoroya, 10/10/2014 [LINK](#)) discusses the statistics and struggles around the suicide rate in the United States and its relation to access to mental health care.

## **MENTAL HEALTH POLICY:**

### *Police, Crisis Intervention and Access to Mental Health Care*

USA Today (Penzstadler 9/23/2014 [LINK](#)) reported “Police agencies around the country have embraced crisis intervention tactics, but a decade after the model took hold a new problem has emerged: full hospitals and a shortage of psychiatric resources. Nationwide, police in 47 states now use the Memphis Model, which aims to de-escalate and divert people suffering a mental health crisis to services instead of jail.”

### *ACA and Young Adult Behavioral Health Access:*

According to a report of the Health Care Cost Institute ([LINK](#)): “Spending on hospital admissions for mental health and substance use jumped by 52.3% in 2011, accelerating a trend that predated the ACA. The increase in spending was largely due to an increase in the number of these admissions. The number of admissions was 146% higher in 2012 than in 2007 for young men and 92% higher for young women. For young men, most of this growth was associated with admissions due to substance use.”

### *Preventing Schizophrenia?*

According to the AMA Morning Rounds of 10/21: “On its “Morning Edition” program and in its “Shots” blog, [NPR](#) (10/20, Standen) reported that “a new type of program taking shape in California...aims to prevent schizophrenia before it officially begins,” drawing upon “research suggesting that schizophrenia unfolds much more slowly than might be obvious, even to families.” Three years ago, however, “a review of prodrome intervention programs called the idea of intervention in pre-schizophrenia ‘inconclusive.’” The piece also noted that in 2013, “the American Psychiatric Association opted to exclude the idea of ‘psychosis risk syndrome’ from the DSM-5, the latest version of the manual of mental disorders.””