

PSYCHIATRIC SUMMARY XXI

Spring 2017

By Frederick Langheim, MD, PhD

This issue marks the twenty-first installment consolidating recent clinical updates, mental health policy news, popular press news patients may be reading, and changes in the landscape of psychiatry in Wisconsin.

OF GENERAL INTEREST

Duty to Predict the Future?

A recent Supreme Court of Washington ruling may hold a psychiatrist liable for damages if his patient kills or injures a third party, even if the patient did not communicate homicidal or violent intentions and even if the patient was seen only in an office setting. For a discussion of the rulings in this case, please refer to AMA Wire (Parks, 1/4/2017, [LINK](#)).

CLINICAL PSYCHIATRY IN THE NEWS, IN BRIEF

Protective Impact of Exercise:

In a population based study of children in Trondheim Norway, Zahl et al (Pediatrics, [LINK](#)) used accelerometry to measure activity levels at age 6 in nearly 800 children who were then evaluated at ages 8 and 10 via semi-structured interviews of the children and their parents. They found that:

At both age 6 and 8 years, higher MVPA [moderate-to-vigorous physical activity] predicted fewer symptoms of major depressive disorders 2 years later. Sedentary behavior did not predict depression, and depression predicted neither MVPA nor sedentary activity. The number of symptoms of major depression declined from ages 6 to 8 years and evidenced modest continuity.

Delirium and Cognitive Decline:

Appearing in JAMA Psychiatry, Davis et al., ([LINK](#)) explored the impact of exposure to delirium on rate of cognitive decline using data from 987 individual brain donors from 3 observational cohort studies. They concluded:

Delirium in the presence of the pathologic processes of dementia is associated with accelerated cognitive decline beyond that expected for delirium or the pathologic process itself. These findings suggest that additional unmeasured pathologic processes specifically relate to delirium. Age-related cognitive decline has many contributors, and these findings at the population level support a role for delirium acting independently and multiplicatively to the pathologic processes of classic dementia.

Abortion and Women's Mental Health:

In a longitudinal study appearing in JAMA Psychiatry (Biggs et al., [LINK](#)) the authors studied nearly 1000 women in a prospective longitudinal study with a quasi-experimental design. Women were recruited from January 1, 2008, to December 31, 2010, from 30 abortion facilities in 21 states throughout the United States, interviewed via telephone 1 week after seeking an abortion, and then interviewed semiannually for 5 years, totaling 11 interview waves. The authors concluded:

In this study, compared with having an abortion, being denied an abortion may be associated with greater risk of initially experiencing adverse psychological outcomes. Psychological well-being improved over time so that both groups of women eventually converged. These findings do not support policies that restrict women's access to abortion on the basis that abortion harms women's mental health.

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Geriatric Polypharmacy:

In a research letter appearing in JAMA Internal Medicine (Maust, Gerlach and Gibson, [LINK](#)) authors studied publicly available data on patients 65 years of age and older from 2004 to 2013. They measured psychotropic polypharmacy, as defined by three or more medications meeting Beers CNS criteria. Medications included antipsychotics, benzodiazepines, non-benzodiazepine benzodiazepine receptor agonist, tricyclic antidepressants, selective serotonin reuptake, and opioids. They found that rates of this polypharmacy increased from 0.6% to 1.4% of reported visits and that this increase was most pronounced in rural populations and among women. Common ailments included anxiety, insomnia, depression and pain.

Internet Based CBT in Meta-Analysis:

Appearing in JAMA Psychiatry (Karyotaki et al., [LINK](#)) authors conducted a meta-analysis of 13,384 abstracts including: "Randomized clinical trials in which self-guided iCBT was compared with a control (usual care, waiting list, or attention control) in individuals with symptoms of depression". The authors concluded:

Self-guided iCBT is effective in treating depressive symptoms. The use of meta-analyses of individual participant data provides substantial evidence for clinical and policy decision making because self-guided iCBT can be considered as an evidence-based first-step approach in treating symptoms of depression. Several limitations of the iCBT should be addressed before it can be disseminated into routine care.

Gut Flora and Depression:

Published in the journal Scientific Reports (Marin et al., 3/7/2017, [LINK](#)), the authors used a well-respected model of depression and rodents to explore microbiota correlations with markers of depression, speculating on the physiologic mechanisms of interaction.

In chronically stressed mice displaying despair behavior, we found that the microbiota composition and the metabolic signature dramatically change. Specifically, we observed reduced Lactobacillus and increased circulating kynurenine levels as the most prominent changes in stressed mice. Restoring intestinal Lactobacillus levels was sufficient to improve the metabolic alterations and behavioral abnormalities.

Social Media Use → Social Isolation?

Primack et al., publishing in the American Journal of Preventive Medicine (3/6/2017 [LINK](#)), studied the social media habits and perceived social isolation of a nationally representative sample of 1787 adults aged 19 to 32 years. They found that young adults with high social media use perceived more social isolation than those with lower use.

MENTAL HEALTH IN THE POPULAR PRESS

Activity Levels → Happiness:

Carried throughout the popular media, an article appearing in PLOS One (Lathia et al., [LINK](#)) used smart phone applications to longitudinally track activity via accelerometer and query activity and happiness in over 10,000 people:

The findings reveal that individuals who are more physically active are happier. Further, individuals are happier in the moments when they are more physically active. These results emerged when assessing activity subjectively, via self-report, or objectively, via participants' smartphone accelerometers. Overall, this research suggests that not only exercise but also non-exercise physical activity is related to happiness.

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Sleep for Forgetting:

Also carried into the popular media was work appearing in Science (de Vivo et al., [LINK](#), and Diering et al., [LINK](#)). Using three dimensional electron microscopy to study nearly 7000 mouse motor cortex synapses, the authors showed that axon-spine interface decreased by 18% more after sleep compared to wake, and scaled with interface size, and showed sparing of larger synapses, providing physiologic evidence for the synaptic homeostasis hypothesis of sleep, essentially that sleep allows us to forget unnecessary learning (synaptic weighting) of the day and consolidate more relevant information, preserving both energy and cortical real-estate and preparing the brain for new learning the next day (see the work of Cirelli and Tononi - anchoring authors of the de Vivo article). In conjunction with their work, the Diering group reported:

Using biochemistry, proteomics, and imaging in mice, we find that during sleep, synapses undergo widespread alterations in composition and signaling, including weakening of synapses through removal and dephosphorylation of synaptic AMPA-type glutamate receptors. These changes are driven by the immediate early gene Homer1a and signaling from group I metabotropic glutamate receptors mGluR1/5. Homer1a serves as a molecular integrator of arousal and sleep need via the wake- and sleep-promoting neuromodulators, noradrenaline and adenosine, respectively. Our data suggest that homeostatic scaling-down, a global form of synaptic plasticity, is active during sleep to remodel synapses and participates in the consolidation of contextual memory.

Quadrupling of Heroin Overdose Deaths:

As reported in Psychcongress (Beasley 2/2017, [LINK](#)), the number of deadly heroin overdoses more than quadrupled from 2010 to 2015. Citing the National Center for Health Statistics, there were 12,989 overdose deaths involving heroin in 2015, compared to 3,036 in 2010. At that time, heroin was involved in 8 percent of U.S. drug overdose deaths, but this increased to 25 percent just five years later.

Facebook and Suicide Prevention:

USA Today (3/1, Gynnn [LINK](#)) and The Washington Post (3/1, Bever [LINK](#)) both reported on Facebook's efforts to prevent suicide given an alarming trend of live streaming of suicides, both through integration of real time suicide prevention tools, live chat support from crisis support organizations, and even exploration of the use of artificial intelligence to screen posts for those at risk.

Mental Illness and Transplant Eligibility:

Appearing front page at the Washington Post (3/4/17 [LINK](#)) Bernstein reported that physicians, "nurses, psychologists and social workers at 815 US transplant programs are free to take neurocognitive disabilities such as autism into consideration any way they want," which the author posited has led to a wide range of variation across these programs.

Autism and Injury:

Appearing in the March 22 AMA morning report:

[CNN](#) (3/21, Scutti) reports that [research](#) published online in the American Journal of Public Health indicates "preventable injuries often lead to death among people with autism." The study found that people with autism "are three times more likely than the general population to die because of injuries." Meanwhile, the study indicates that "for children and young teens with this developmental disability, the numbers are more striking: They are 40 times more likely to die from injury than the general child population."

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[HealthDay](#) (3/21, Thompson) reports that the study, which included data on “nearly 1,370 people diagnosed with autism who died between 1999 and 2014,” found that children “with an autism spectrum disorder are 160 times more likely to die from drowning compared with the general pediatric population.”

MENTAL HEALTH POLICY

Mental Health Needs Underserved on Campuses:

As reported in the 2/7/17 AMA Morning Report:

In a special report, [STAT](#) (2/6, Thielking) explains that colleges and universities across the US “are failing to keep up with a troubling spike in demand for mental health care – leaving students stuck on waiting lists for weeks, unable to get help.” After surveying “dozens of universities about their mental health services,” STAT discovered that “students often have to wait weeks just for an initial intake exam to review their symptoms.” Even “longer still” is the waiting time “to see a psychiatrist who can prescribe or adjust medication – often a part-time employee.”