

PSYCHIATRIC SUMMARY XX

Winter 2017

By Frederick Langheim, MD, PhD

This issue marks the twentieth 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

Zip Code vs Genetic Code:

Many of you may be familiar with the social determinants of health and mental health. Many of you may not be. Summed up in the statement that your zip code may be more important to your overall health than your genetic code, recent research published in JAMA Pediatrics ([LINK](#)) demonstrated correlation between physiological stress measures of cortisol levels and telomere length with proximity to liquor and convenience stores, rates of domestic violence and rates of violent crimes. Theal et al. concluded:

Neighborhoods are important targets for interventions to reduce the effect of exposure to violence in the lives of children. These findings provide the first evidence that objective exposures to neighborhood-level violence influence both physiological and cellular markers of stress, even in children.

Over 25% of Medical Students Suffer Depression:

Appearing in JAMA (12/6/2016, [LINK](#)) Rotenstein et al. conducted a meta-analysis of 167 cross-sectional studies (n = 116 628) and 16 longitudinal studies (n = 5728) from 43 countries, all but one study of which used self-reported measures. "The overall pooled crude prevalence of depression or depressive symptoms was 27.2% (37 933/122 356 individuals; 95% CI, 24.7% to 29.9%, I² = 98.9%)." In addition: "The overall pooled crude prevalence of suicidal ideation was 11.1% (2043/21 002 individuals; 95% CI, 9.0% to 13.7%, I² = 95.8%)."

Social Transfer of Hyperalgesia:

In a very interesting study appearing in Science (2016, [LINK](#)) Smith et al. demonstrated that hyperalgesia induced in mice via opiate withdrawal, alcohol withdrawal or inflammatory pain resulted in hyperalgesia of mice housed and tested in the same room. The transmission of this heightened pain sensitivity appeared to be via olfactory cues.

CLINICAL PSYCHIATRY IN THE NEWS, IN BRIEF

A Non-Reward Attractor Theory of Depression:

Appearing in Neuroscience and Biobehavioral Reviews under the same title as this heading, Rolls hypothesizes a lateral orbitofrontal locus of depression (9/2016, [LINK](#)), positing a hypersensitivity of this region with cascading negative cognitive states leading to and perpetuating depressive episodes.

Lithium, Mental Illness, and Mouse Dendrites:

Reported in Science (Wadman, 10/18/2016, [LINK](#)) new research suggests that lithium may normalize behaviors as well as dendritic spine synapse density in mice given a genetic mutation common to autism, schizophrenia and bipolar illness.

Decline in Beds; Increase in Suicides:

In an article appearing online first in the JAMA network [LINK](#), Authors Bastiampillai, Sharfstein and Alison demonstrate the increase in suicide rates correlating with annual decreases in available psychiatric beds. By comparison, the authors look at psychiatric beds available per 100,000 population:

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Currently, the United States has a relatively low 22 psychiatric beds per 100 000 population compared with the Organisation for Economic Cooperation and Development (OECD) average of 71 beds per 100 000 population. Only 4 of the 35 OECD countries (Italy, Chile, Turkey, and Mexico) have fewer psychiatric beds per 100 000 population than the United States. Although European health systems are very different from the US health system, they provide a useful comparison. For instance, Germany, Switzerland, and France have 127, 91, and 87 psychiatric beds per 100 000 population, respectively.

Vets Suicide Risk Varies by Time:

In research published in *The Lancet Psychiatry* (Shen, Cuna and Williams, [LINK](#)) the greatest period of risk for suicide among veterans returning from deployment appears to escalate during the first year of separation from the military.

Dementia Rates Declining:

According to a nationally representative longitudinal population based study of over 10,000 individuals published in *JAMA Internal Medicine* (Langa et al., [LINK](#)):

The prevalence of dementia in the United States declined significantly between 2000 and 2012. An increase in educational attainment was associated with some of the decline in dementia prevalence, but the full set of social, behavioral, and medical factors contributing to the decline is still uncertain. Continued monitoring of trends in dementia incidence and prevalence will be important for better gauging the full future societal impact of dementia as the number of older adults increases in the decades ahead.

Internet CBT and Exercise vs Usual Care:

Published in the *British Journal of Psychiatry*, Hallgren et al. ([LINK](#)) conducted A multicentre, three-group parallel, randomised controlled trial of adults age 18 to 71 using assessment at 3 months (post-treatment) and 12 months (primary end-point). Participants with mild to moderate depression were randomly assigned to one of three 12-week interventions: supervised group exercise, clinician-supported ICBT or usual care by a physician. The primary outcome was depression severity assessed by the Montgomery-Åsberg Depression Rating Scale (MADRS). According to the results:

The response rate at 12-month follow-up was 84%. Depression severity reduced significantly in all three treatment groups in a quadratic trend over time. Mean differences in MADRS score at 12 months were 12.1 (ICBT), 11.4 (exercise) and 9.7 (usual care). At the primary end-point the group × time interaction was significant for both exercise and ICBT. Effect sizes for both interventions were small to moderate.

Celexocib Adjunct to SSRI?

A small study ([LINK](#) to popular press release) out of Loyola University and presented at The International Congress on Psychiatry and the Neurosciences suggested that the anti-inflammatory celexocib could markedly improve the antidepressant effects of escitalopram.

Maternal Influenza Vaccination ASD:

Appearing in *JAMA Pediatrics* (Zerbo et al, [LINK](#)) a cohort study of nearly 200,000 children, comparing those born to mothers diagnosed with influenza (1400) and mothers receiving influenza vaccination (45,231) found that:

Maternal influenza infection (adjusted hazard ratio, 1.04; 95% CI, 0.68-1.58) or influenza vaccination (adjusted hazard ratio, 1.10; 95% CI, 1.00-1.21) anytime during pregnancy was not associated with increased ASD risk. In trimester-specific analyses, first-trimester influenza

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vaccination was the only period associated with increased ASD risk (adjusted hazard ratio, 1.20; 95% CI, 1.04-1.39). However, this association could be due to chance (P = 0.1) if Bonferroni corrected for the multiplicity of hypotheses tested (n = 8). Maternal influenza vaccination in the second or third trimester was not associated with increased ASD risk.

MENTAL HEALTH IN THE POPULAR PRESS

ER Psychiatric Volume:

Reported both at Philly.com ([LINK](#), Burling, 10/18/2016) and Kaiser Health News ([LINK](#), Luthra, 10/17/2016), emergency room providers were polled regarding the challenges they face. Large percentages see long wait times, outpatient mental health access leading to the ER as default psychiatric consultation, and up to one week ER housing until a psychiatric bed can be available as major challenges in the field of emergency room medicine.

Access a Worsening Problem:

Multiple news sources (Fox News, no author listed, 10/19, [LINK](#); The Washington Post, Nutt, 10/19, [LINK](#)) also reported on the annual Mental Health America State of Mental Health Report ([LINK](#)) which underscored the lack of access to mental health care. Some of the reported statistics include: more than half of adults with mental illness go untreated and 6 of 10 youth with major depression receive no treatment.

Adolescent Death as Likely from Suicide as MVA:

According to data from the CDC ([LINK](#)), heavily publicized across news outlets, as death from motor vehicle accidents has steadily declined over the years 1999 to 2014, death from suicide has increased in the 10 to 14 year old population. Homicide death has marginally declined over this time period.

MDMA for PTSD?

Appearing in The New York Times (Philips, 11/29/2016, [LINK](#)) the FDA has agreed to new trials of use of MDMA (Ecstasy) in treatment for Post Traumatic Stress Disorder. The permission was granted for Stage 3 large scale trials.

After three doses of MDMA administered under a psychiatrist's guidance, the patients reported a 56 percent decrease of severity of symptoms on average, one study found. By the end of the study, two-thirds no longer met the criteria for having PTSD. Follow-up examinations found that improvements lasted more than a year after therapy.

Psilocybin for Anxiety? Depression?

Also appearing in The New York Times (12/1/2016, [LINK](#)) author Hoffman explored current research in the use of hallucinogenic mushrooms for cancer treatment related mental health concerns, depression, anxiety and addiction.

Financial Impact of Sleep Deprivation:

Mary Bowerman, writing in USA Today (11/30/2016, [LINK](#)) discussed recent research that elucidates the impact of sleep debt on the US Economy:

A lack of sleep among U.S. workers costs the U.S. economy up to \$411 billion dollars a year, [according to researchers at the not-for-profit research organization RAND Europe. According to the report](#), lack of sleep results in higher mortality risk and lower work productivity, causing U.S. companies to lose 1.2 million working days a year.

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Dangers of Drowsy Driving:

Many news outlets picked up on a AAA study looking at the risks of driving while sleep deprived. From the AMA Morning Report:

The CBS Evening News (12/6, story 9, 1:50, Pelley) broadcast on a new AAA [study](#) released Tuesday suggesting “that getting behind the wheel on four or five hours’ sleep is just as dangerous as driving drunk.” According to the broadcast, a little over one in three drivers in the US does not get “the recommended seven hours of sleep daily,” and those who do get “just five or six hours” are “almost twice as likely to be involved in an accident.” As a driver’s hours of sleep decreased, the risk of an accident increased exponentially, with “teenagers, older adults, and people who have a sleep debt” at “the highest risk.”

[Reuters](#) (12/6) reports the study used NHTSA crash data from July 2005 through December 2007.

The [Washington Post](#) (12/6, Halsey) cites NHTSA’s statistics for traffic fatalities last year, when “35,092 people were killed...up 7.2 percent from 32,675 in 2014.” The executive director of AAA, David Yang, says “You cannot miss sleep and still expect to be able to safely function behind the wheel.”

Reactivation of Latent Working Memory:

UW Madison’s Dr. Bradley Postle and his team published fascinating research in the journal *Science* regarding the ability to reactivate silent working memories in the brains of volunteers using transcranial magnetic stimulation ([LINK](#)):

The ability to hold information in working memory is fundamental for cognition. Contrary to the long-standing view that working memory depends on sustained, elevated activity, we present evidence suggesting that humans can hold information in working memory via “activity-silent” synaptic mechanisms. Using multivariate pattern analyses to decode brain activity patterns, we found that the active representation of an item in working memory drops to baseline when attention shifts away. A targeted pulse of transcranial magnetic stimulation produced a brief reemergence of the item in concurrently measured brain activity. This reactivation effect occurred and influenced memory performance only when the item was potentially relevant later in the trial, which suggests that the representation is dynamic and modifiable via cognitive control. The results support a synaptic theory of working memory.

MENTAL HEALTH POLICY

Addiction Crisis Highlighted:

Many news outlets reported on the Surgeon General’s underscoring of the addiction crisis. As reported in the AMA Morning Report of 11/17/16:

The [Washington Post](#) (11/17, Bernstein) says that on Thursday, US Surgeon General Vivek Murthy, MD, unveiled a landmark report which “places drug and alcohol addiction alongside smoking, AIDS and other public health crises of the past half-century, calling the current epidemic ‘a moral test for America.’” During an interview, Dr. Murthy stated, “The reason I’m issuing this report is I want to call our country to action around what has become a pressing public health issue.”

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[USA Today](#) (11/17, Hafner) says the report, called “Facing Addiction in America: The Surgeon General’s Report on Alcohol, Drugs, and Health,” found that “one in seven Americans,” or nearly 21 million people, will face substance addiction, but only about “10% of those now addicted receive treatment.” Data also show one person “dies every 19 minutes from opioid or heroin overdose alone.”

On its website, [ABC News](#) (11/17, Mohny) says that at present, “the number of people with a substance use disorder exceeds the number of people diagnosed with cancer – any kind of cancer, according to the report.” In addition, while data show “32,744 people died from car accidents in 2014, the report found that approximately 50,000 people died from either an opioid, alcohol or other drug overdose that year.”

[Reuters](#) (11/17, Clarke) says this was “the first-ever Surgeon General’s report on substance abuse,” and Dr. Murthy “said he hopes it will galvanize work on the issue the way a similar report 50 years ago sparked decades of effort to combat smoking.”

More Evidence to Delay School Start Times:

A study in South Korean youth regarding delayed school start times showed significant improvement in duration of sleep, mood and behaviors with as modest a change of 15 minutes (sleepmedicine, Ngan Yin Chan et al., [LINK](#)):

Results: Students in intervention school significantly delayed their weekday wakeup time ($P < 0.001$) and increased their total time in bed ($P < 0.001$) when compared to the comparison school. Both groups experienced a delay in their weekday bedtime. The students in the intervention school showed improved mental health [General Health Questionnaire (GHQ) score, $P = .015$], better prosocial behaviors ($P = .009$), better peer relationship ($P < 0.001$, more attentive ($P < 0.001$), less emotional problems ($P = .002$) and behavioral difficulties ($P < 0.001$) as measured by Strengths and Difficulties Questionnaire (SDQ).

Conclusions: A modest delay (15 minutes) of the school start time can increase adolescent sleep with corresponding improvement in mood and behaviors. Current findings have significant implications for the education policy, suggesting that school administrators and policy makers should systematically consider delaying school start time to promote sleep and health among school-aged adolescents.