



U of L Geriatrics

Substance Abuse in Our Elders:

Are we ready for the boomers?

Presented by Demetra Antimisiaris, PharmD, CGP, FASCP

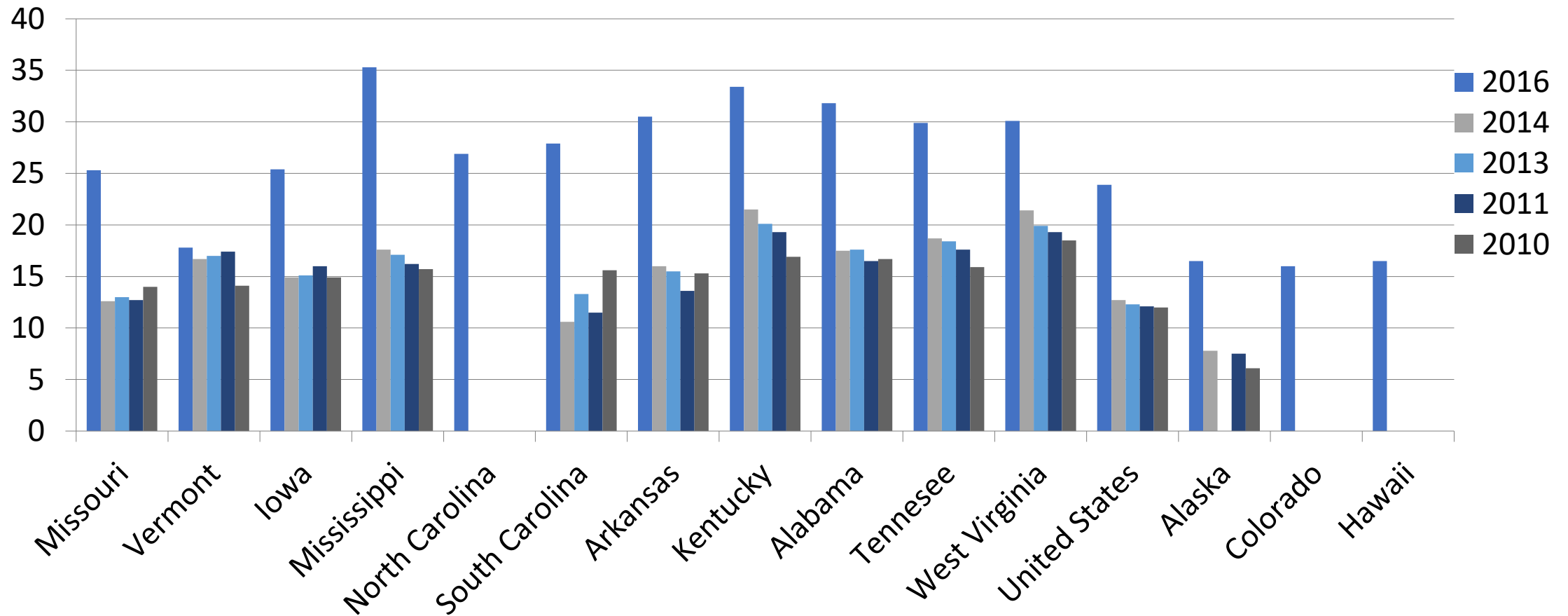
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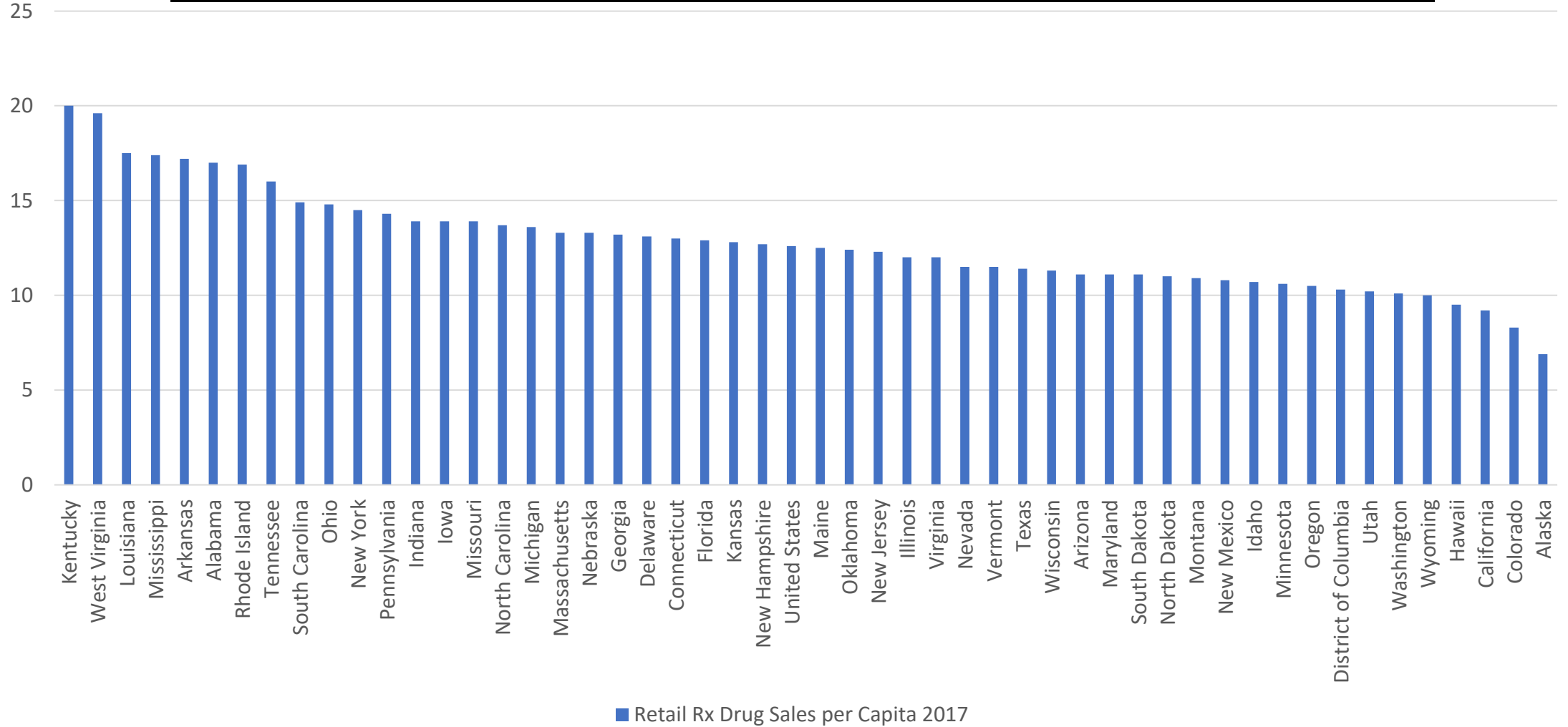
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Scripts per capita 2017



(Henry J Kaiser Family Foundation State Health Facts 2018)

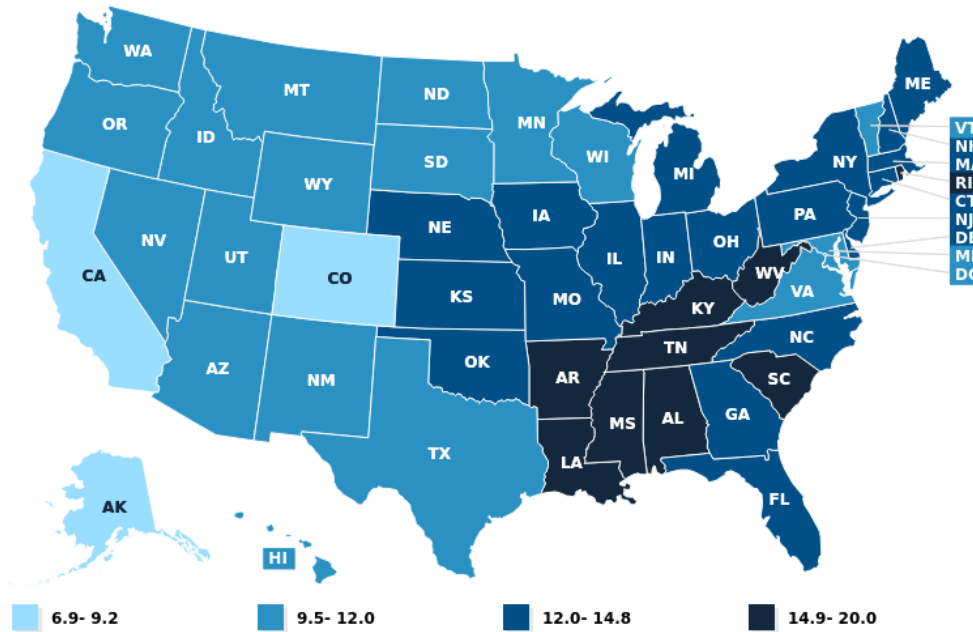
Retail prescription drug sales per capita 2017



(Henry J Kaiser Family Foundation State Health Facts 2018)

Obesity map is nearly identical to this scripts per capita map

Retail Prescription Drugs Filled at Pharmacies (Annual per Capita): Retail Rx Drugs per Capita, 2017



SOURCE: Kaiser Family Foundation's State Health Facts.

(Henry J Kaiser Family Foundation State Health Facts 2018)

And...the US consumes 80% of the world's opioids and 99% of hydrocodone

Wang J, Christo PJ. The influence of prescription monitoring programs on chronic pain management. *Pain Physician*. 2009;12(3):507-515. SAMHSA, Office of Applied Studies. Results from the 2006 National Survey on Drug Use and National Findings. 2007. www.oas.samhsa.gov/nsduh/2k6nsduh/2k6results.cfm.



The Boomers!



SO WHY ARE THE “BOOMERS” DIFFERENT THAN OTHER AGING POPULATION COHORTS?

Larger population

The dynamics of the “Me” generation – rightly or wrongly are accused of being more self centered and used to having things their way

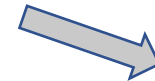
Higher risk of substance abuse in this cohort than in others previously

Certainly more accepting of “Sex, Drugs, and Rock and Roll”

The Boomers Are Coming!

National Household Survey on Drug Abuse (NHSDA)

- regression models **estimate the number of adults** with substance abuse problems in the year 2020.
- the number of adults over the age of 50 with substance abuse problems **will double to 5 million** during the time period from 1999 to 2020.
- In 2020, approximately **50 percent of persons aged 50 to 70** will be in a **high-risk group**



Versus 9% in 1999

SOCIAL SUPPORT SYSTEMS

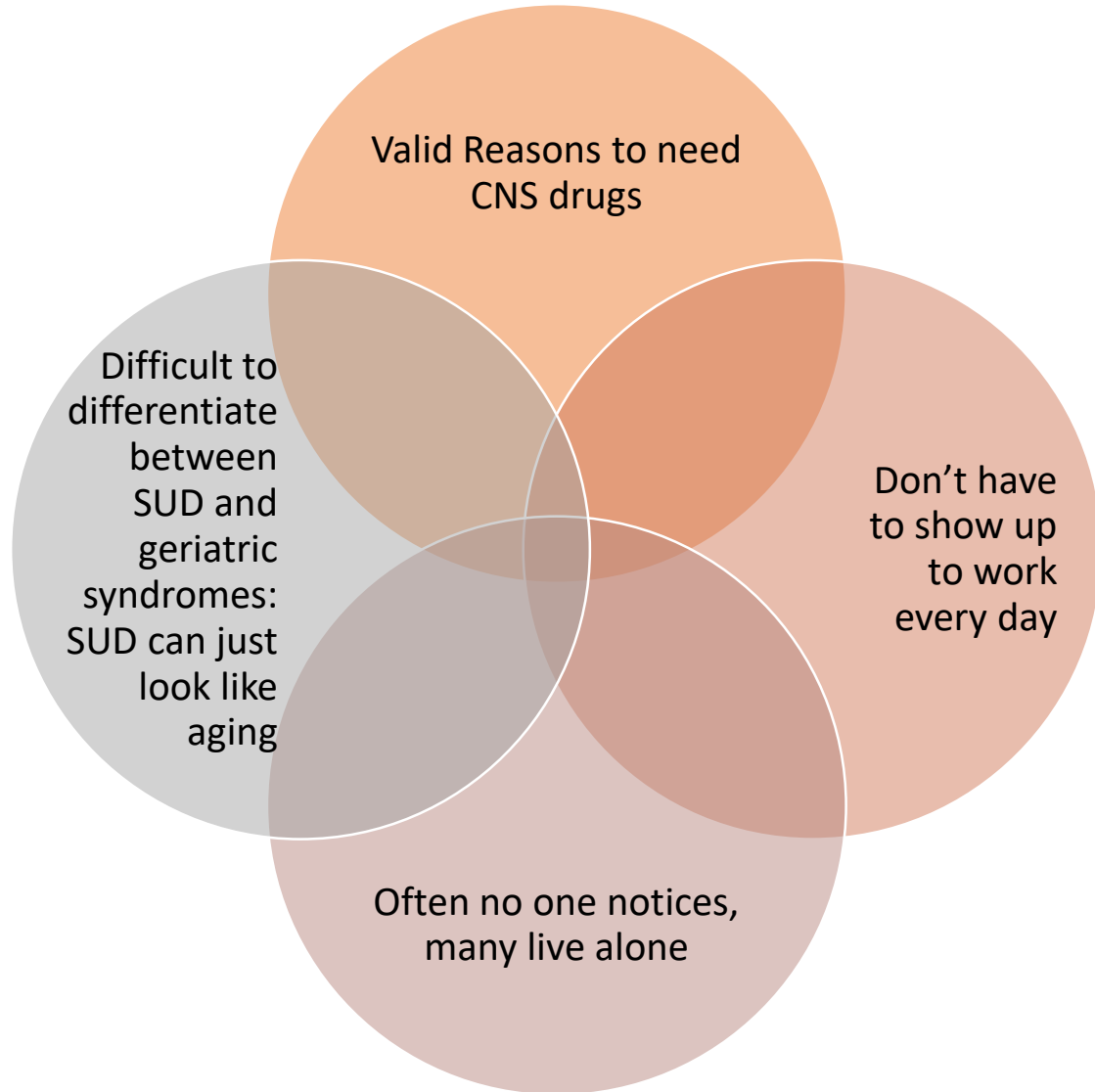
As People age, social support becomes more important.

During the “baby bust” of the 60’s, there was a marked increase of females not having children.

This means that people now in their 60’s are much less likely to have a social support system with adult children to help

Those WITH adult children are less likely to live in the same general area.

SUD and related problems, in older adults flies under the radar for many reasons



Diversion

Street Value

Criminality

Elder Abuse

Trauma and Anxiety Disorders

[Journal of Urban Health](#)
December 2013, Volume 90, Issue 6, pp 1130–1150 | [Cite as](#)

Longitudinal Determinants of Substance Use Disorders

Authors [Authors and affiliations](#)

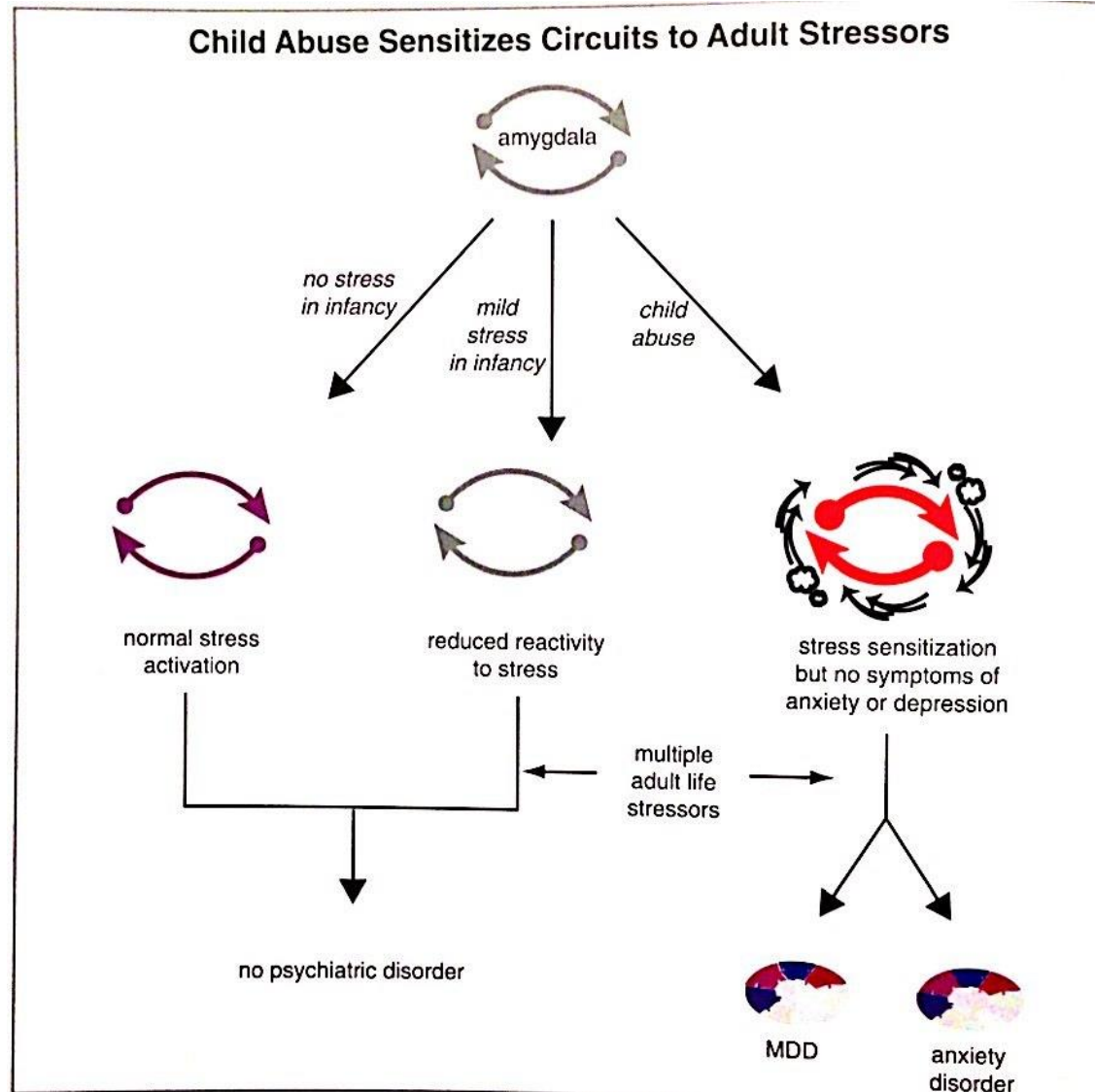
Judith S. Brook , Jung Yeon Lee, Elizabeth Rubenstone, Stephen J. Finch, Nathan Seltzer, David W. Brook

Article
First Online: 19 October 2013

463 Downloads 5 Citations

Abstract

Substance use and substance use disorders (SUDs) have been linked with marital discord.



Adopted from *Essential Psychopharmacology 3rd edition*
Steven Stahl

Grandma's Experiences Leave a Mark on Your Genes

Your ancestors' lousy childhoods or excellent adventures might change your personality, bequeathing anxiety or resilience by altering the epigenetic expressions of genes in the brain.

By Dan Hurley | Thursday, June 25, 2015

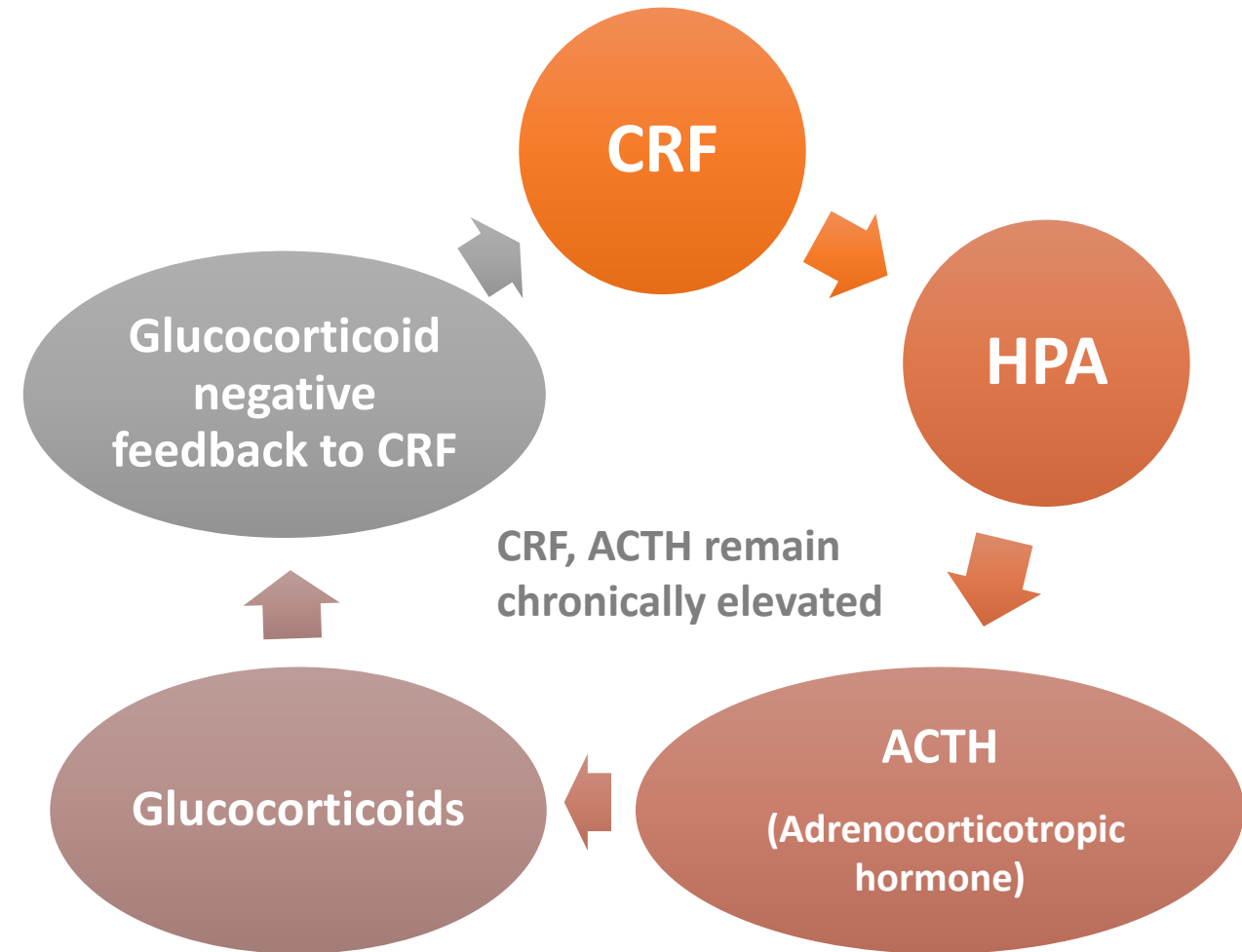
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Alison Mackey/DISCOVER

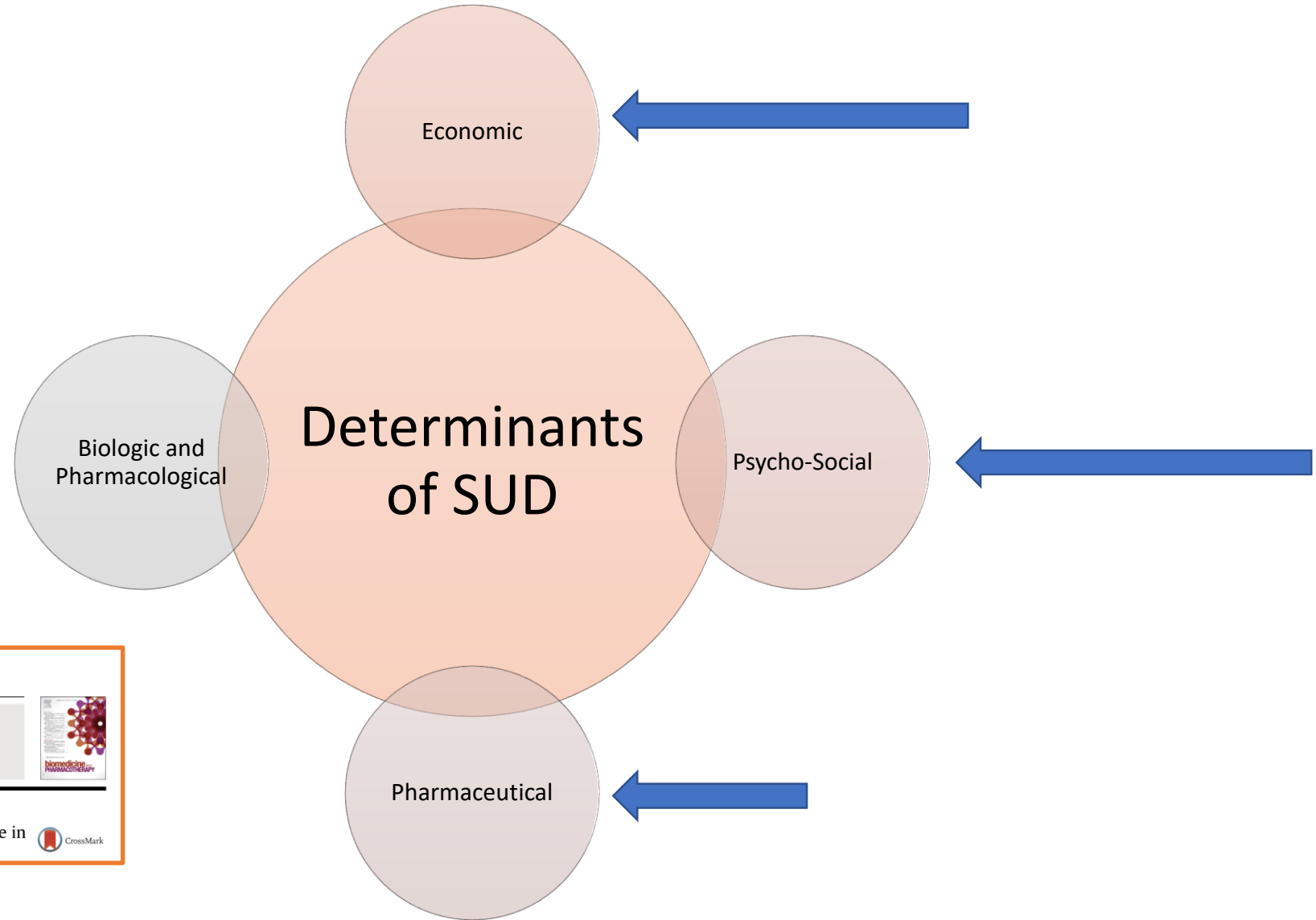
Abnormal stress response from **chronic unremitting stress**; especially in stress sensitized circuits from childhoods.

- Self medicating is a way to **alleviate stress**
- Initially, a way to alleviate unpleasant symptoms of un-manageable stress.
- **Reward circuitry can overpower the use of substances and turn it into the abuse of substances.**
- Potent behavior reinforcing properties of some psychoactive drugs sustain the need and ability of drug to ameliorate underlying psychosocial symptoms.



Epigenetic manipulation of opioid receptor to down regulate expression of Mu receptor (involved with reinforcing addiction)

Liu Y, Li D, Liu Z, et al. Nature, Dec. 2015



Biomedicine & Pharmacotherapy 93 (2017) 406–411



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Original article

Simvastatin prevents morphine-induced tolerance and dependence in mice



Breaking News, kind of...

Respiratory epidemiology

ORIGINAL ARTICLE

Mortality from respiratory diseases associated with opium use: a population-based cohort study

Atieh Rahmati,¹ Ramin Shakeri,¹ Hooman Khademi,¹ Hossein Poutschi,¹ Akram Pourshams,¹ Arash Etemadi,^{1,2} Masoud Khoshnia,³ Amir Ali Sohrabpour,¹ Ali Aliasgari,¹ Elham Jafari,¹ Farhad Islami,^{1,4} Shahryar Semnani,³ Abdolsamad Gharravi,^{1,3} Christian C Abnet,² Paul D P Pharoah,⁵ Paul Brennan,⁶ Paolo Boffetta,⁷ Sanford M Dawsey,² Reza Malekzadeh,¹ Farin Kamangar^{1,8}

► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/thoraxjnl-2015-208251>).

For numbered affiliations see end of article.

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AR, RS, RM and FK contributed equally.

Received 2 January 2016

ABSTRACT

Background Recent studies have suggested that opium use may increase mortality from cancer and cardiovascular diseases. However, no comprehensive study of opium use and mortality from respiratory diseases has been published. We aimed to study the association between opium use and mortality from respiratory disease using prospectively collected data.

Methods We used data from the Golestan Cohort Study, a prospective cohort study in northeastern Iran, with detailed, validated data on opium use and several other exposures. A total of 50 045 adults were enrolled from 2004 to 2008, and followed annually until June 2015, with a follow-up success rate of 99%. We used Cox proportional hazard regression models to evaluate the association between opium use and outcomes of interest.

Results During the follow-up period, 331 deaths from respiratory disease were reported (85 due to respiratory

Key messages

What is the key question?

- What are the effects of chronic opium use on mortality due to malignant and non-malignant respiratory disease?

What is the bottom line?

- Long-term opium use is associated with increased mortality from both malignant and non-malignant respiratory diseases.

Why read on?

- The results of this study shed light on a relatively new risk factor for death from respiratory diseases. The results are relevant to both clinicians and public health practitioners.

Benzodiazepines: Revealing of the Secrets of GABA_A-Mediated Immunosuppression: GABA_A Subtype-Specific Benzodiazepines are the Hope*

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Department of Anesthesiology, Perioperative, Critical Care, and Pain Medicine
Brigham and Women's Hospital
Harvard Medical School
Boston, MA

role of the drugs that act via these receptors are unclear in the innate immune regulation.

In this issue of *Critical Care Medicine*, Sanders et al (7) present an elegant series of in vivo and in vitro experiments testing the hypothesis that $\alpha_1\gamma_2$ subunit-containing GABA_A receptors on alveolar macrophages (when activated via a 7-day benzodiazepine treatment) play a key role in increasing the mortality from *Streptococcus pneumoniae* in an experimental murine

D benzodiazepines are the most commonly used anxiolytic

EDITORIAL

Annals of Internal Medicine

Prescription Opioids and Infection Risk: Research and Caution Needed

In their report in *Annals*, Wiese and colleagues (1) provide evidence that prescription opioids are associated with an increased risk for serious infections. In 2015, an estimated 92 million U.S. adults—more than 1 in 3—used a prescription opioid (2). Because opioids are prescribed so widely despite inadequate data about their safety and efficacy (3), how should clinicians and scientists respond to these disturbing epidemiologic findings?

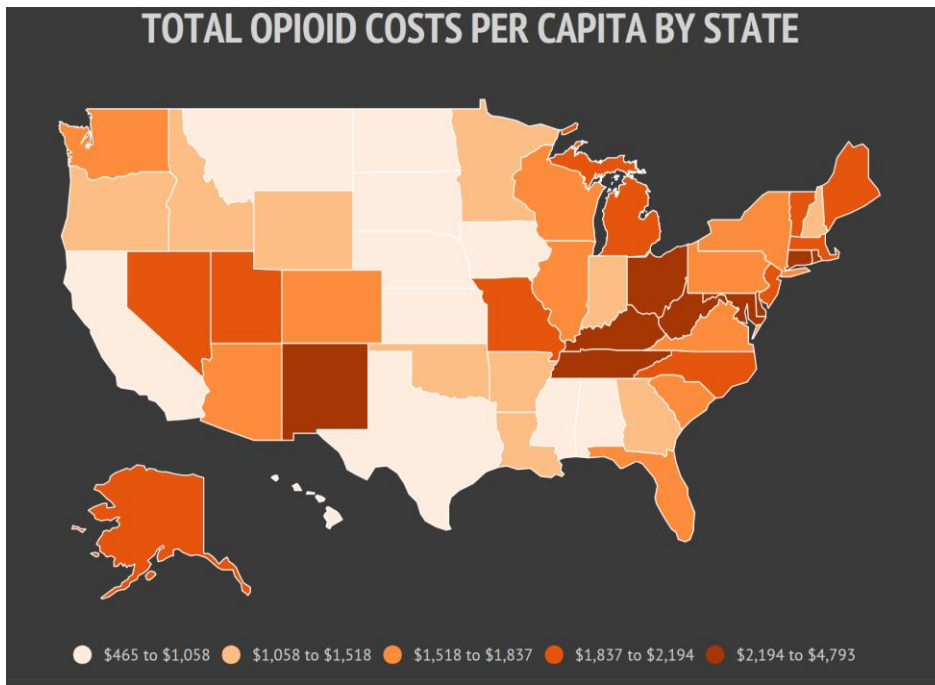
Although opioid addiction and overdose have received much attention as risks of prescription opioid use, remarkably little consideration has been given to another potential risk: infection. Three decades of basic science and animal studies have found that some opioids have immunosuppressive properties (4–6), including reduction of natural killer cell cytotoxicity (5, 6) and impairment of neutrophil chemotaxis (6). Yet, only 3 epidemiologic studies examining the relationship between prescription opioid use and infections in humans have been published (1, 7, 8).

outcome observed in all 3 studies, 2 also found associations between opioid use and other infections (1, 7).

All observational studies of medication safety face challenges, including the potential for confounding, because patients are not randomly assigned to medication. We know that current opioid users tend to have a poorer health status and greater comorbidity burden than nonusers. For example, in the Wiese group's new study (1), current opioid users were more than twice as likely as remote users to have alcohol or substance use disorders and 3 times more likely than remote users to smoke. Yet, all 3 studies rigorously addressed confounding and conducted extensive sensitivity analyses. The diversity of approaches used, as well as the consistency of results, suggests a causal association.

Taken together, these studies provide cautionary evidence of a higher infection risk with prescription opioid use, suggesting the need for prudent steps to protect patients even though uncertainties remain. To guide prescribing, we need answers to critical questions: Do these risks apply primarily to new users of

2013, 2017, 2018



KY can tackle **21st**
Century Problems

Has **Infrastructure**,
THE Laboratory, to
address **Federal**
government needs
(..there's large
amount of federal
research funding)

Can **stimulate**
economy, IP
creation, and
entrepreneurialism.

Thank You