It's Much More Than Self-Medication: The Very Complicated Relationship between PTSD and Substance Use

Brian L. Meyer, Ph.D.
Psychology Program Manager
Community-Based Outpatient Clinics
Central Virginia VA Health Care System
Henrico, VA

April 22, 2021

Assistant Professor
Department of Psychiatry
Virginia Commonwealth University
Richmond, VA

Disclaimer

- This project was supported by Grant No. 2019-DC-BX-K012 awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Department of Justice's Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the Office for Victims of Crime, and the SMART Office.

  Points of views or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Disclaimer

The views expressed in this presentation are solely those of the presenter and do not represent those of the Veterans Health Administration or the United States government.

The presenter has no conflicts of interest to disclose.

Copyright Notice

All materials, text, and organization of this presentation, except for photographs, graphics, and where otherwise noted, are © Brian L. Meyer.

The Co-Occurrence of PTSD and Substance Abuse

CO-OCCURRENCE OF PTSD AND SUBSTANCE ABUSE

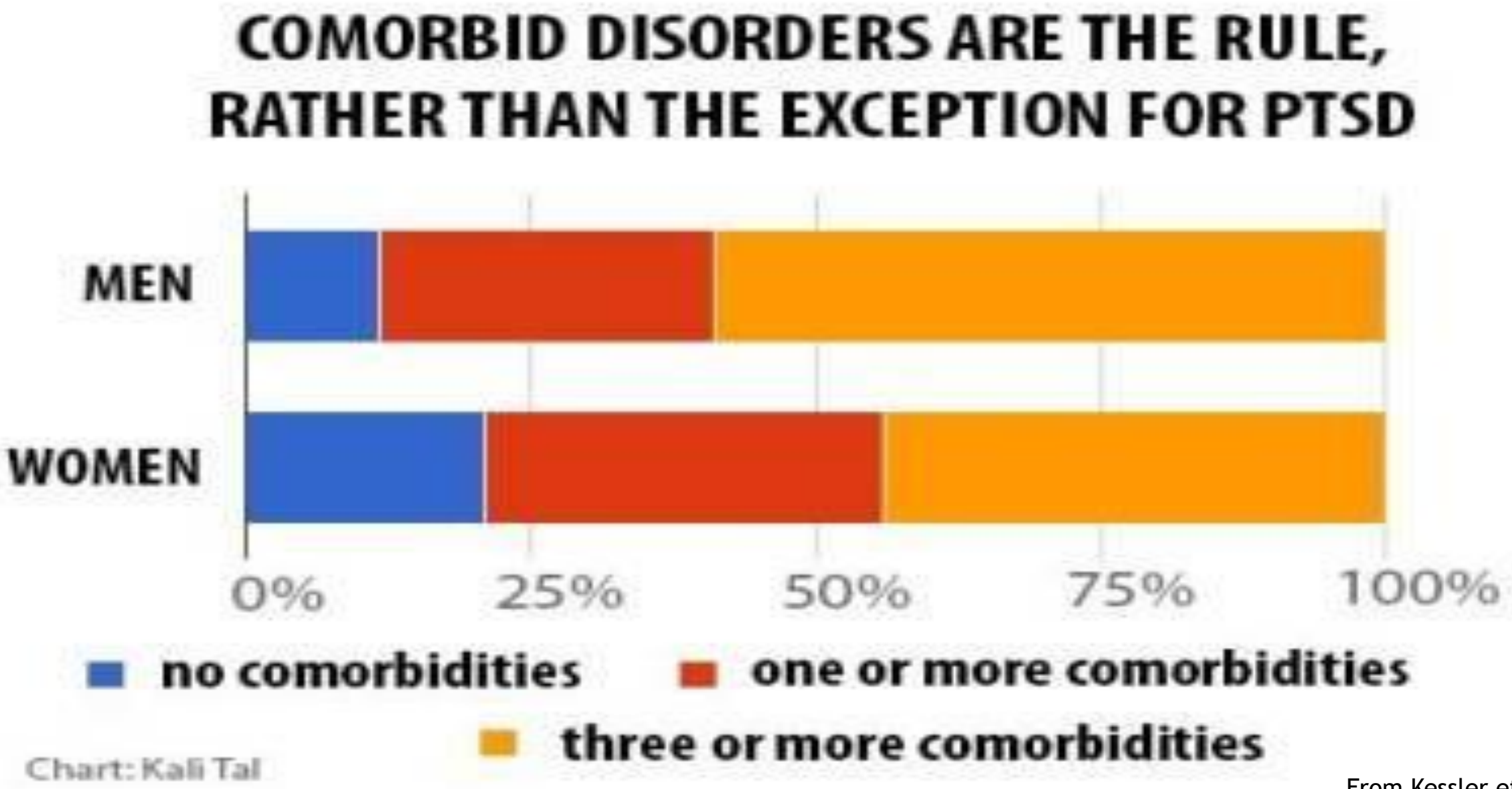
Co-occurring disorders are the rule rather than the exception.

SAMHSA, 2002

Co-Occurrence of PTSD and Substance Abuse

- PTSD and substance abuse co-occur at a high rate
  - 20-40% of people with PTSD also have SUDs (SAMHSA, 2007)
  - 40-60% of people with SUDs have PTSD
- Substance use disorders are 3-4 times more prevalent in people with PTSD than those without PTSD (Khantzian & Albanese, 2008)
- The presence of either disorder alone increases the risk for the development of the other
- PTSD increases the risk of substance relapse (Norman et al., 2007)
- The combination results in poorer treatment outcomes (Ouimette et al., 2003; Sonne et al., 2003)

Figure 1



From Kessler et al., 1995

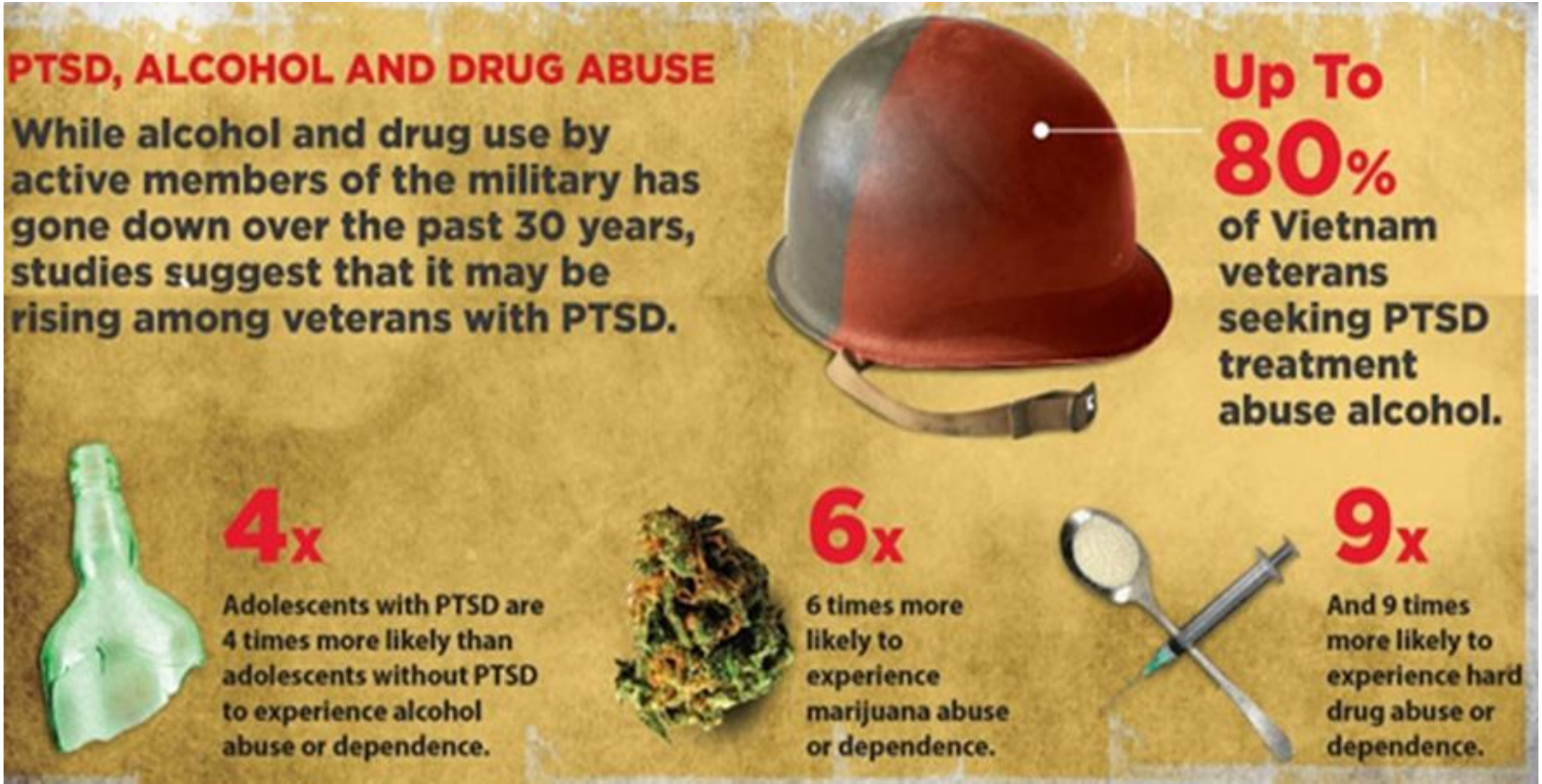
National Comorbidity Survey

Among people with PTSD:

	Male	Female
Alcohol Abuse/ Dependence	51.9%	27.9%
Drug Abuse/ Dependence	34.5%	26.9%

Kessler et al., 1995

PTSD and Substance Abuse

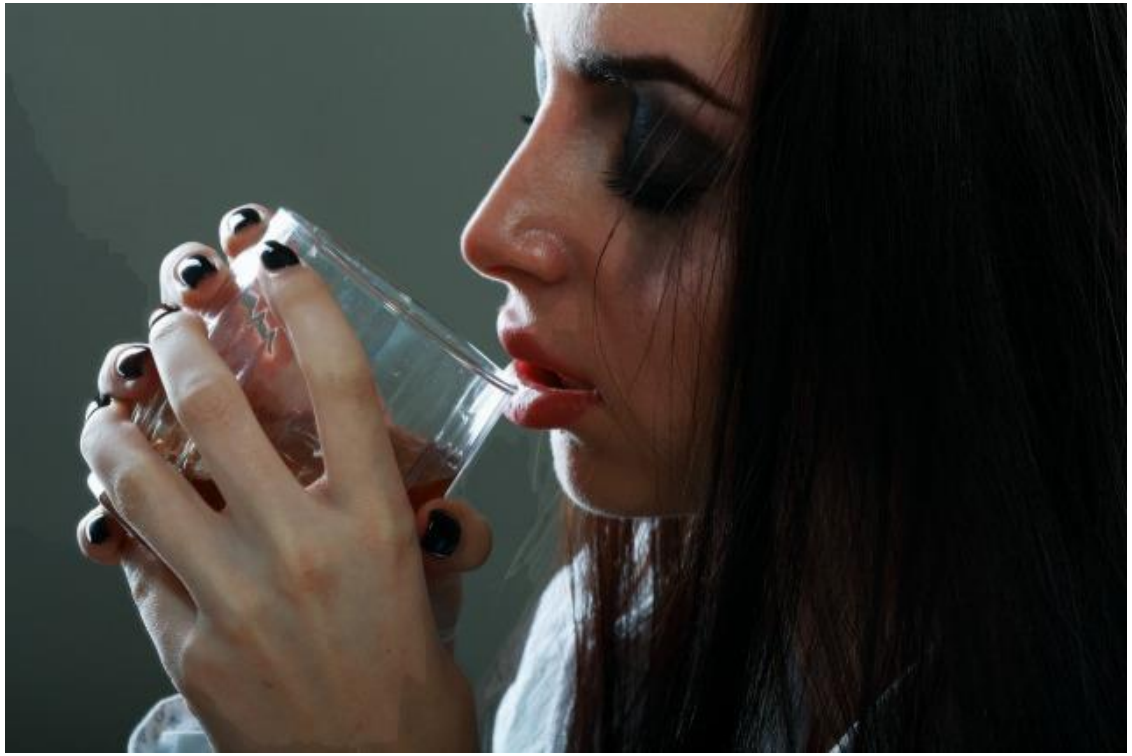


PTSD and Opioid Dependence

- 42 % of 459 patients in opioid treatment had PTSD (Mills et al., 2005)
  - PTSD patients had poorer occupational, physical and mental health functioning outcomes
  - PTSD patients used more opioids and had more overdoses, relapses, and readmissions
- 14-41% of patients on methadone maintenance treatment have PTSD (Barry et al., 2011)

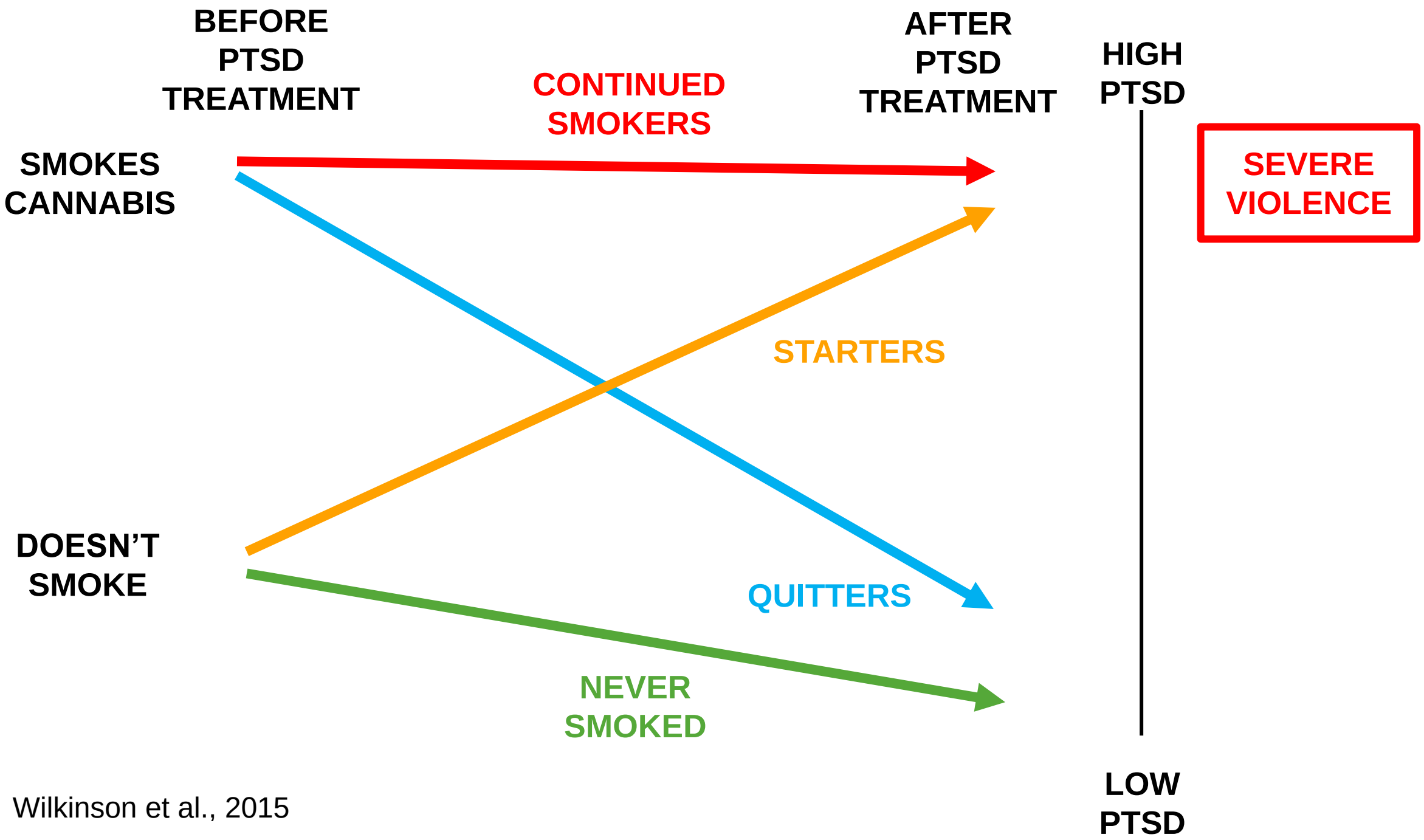
PTSD and Alcohol Abuse

- Among people with PTSD, 52% of men and 28% of women develop an Alcohol Use Disorder (Najavits, 2007)
- PTSD increases the risk of alcohol relapse (Heffner et al., 2011)



Marijuana and PTSD

- Some people claim that marijuana helps treat PTSD
- A recent observational study of more than 2,000 Veterans in PTSD treatment programs (Wilkinson et al., 2015) found:
  - Those who never used marijuana had significantly less severe PTSD symptoms than those who had used it or started using it after beginning PTSD treatment
  - Those who used marijuana when they started treatment but stopped using it after the conclusion of treatment also had significantly less severe PTSD symptoms than those who continued to use it
  - Those who started using marijuana after the start of treatment had the highest levels of violent behavior



Wilkinson et al., 2015

It’s Not Just Self-Medication

The Self-Medication Hypothesis

"Could we up the dosage? I still have feelings."

The Timing of Trauma and Substance Abuse

- Only about 1/3 of people start abusing substances after their traumatic experience
- About 1/3 experience trauma and start abusing substances simultaneously
- About 1/3 abuse substances <u>before</u> they experience trauma
- Therefore, because of timing and sequencing, only 1/3 of people initiated their substance abuse after trauma

Many Reasons Why People with PTSD Use Substances

- To numb their painful feelings (self-medication).
- To try to relax.
- To forget the past.
- To go to sleep.
- To prevent nightmares.

More Reasons Why People with PTSD Use Substances

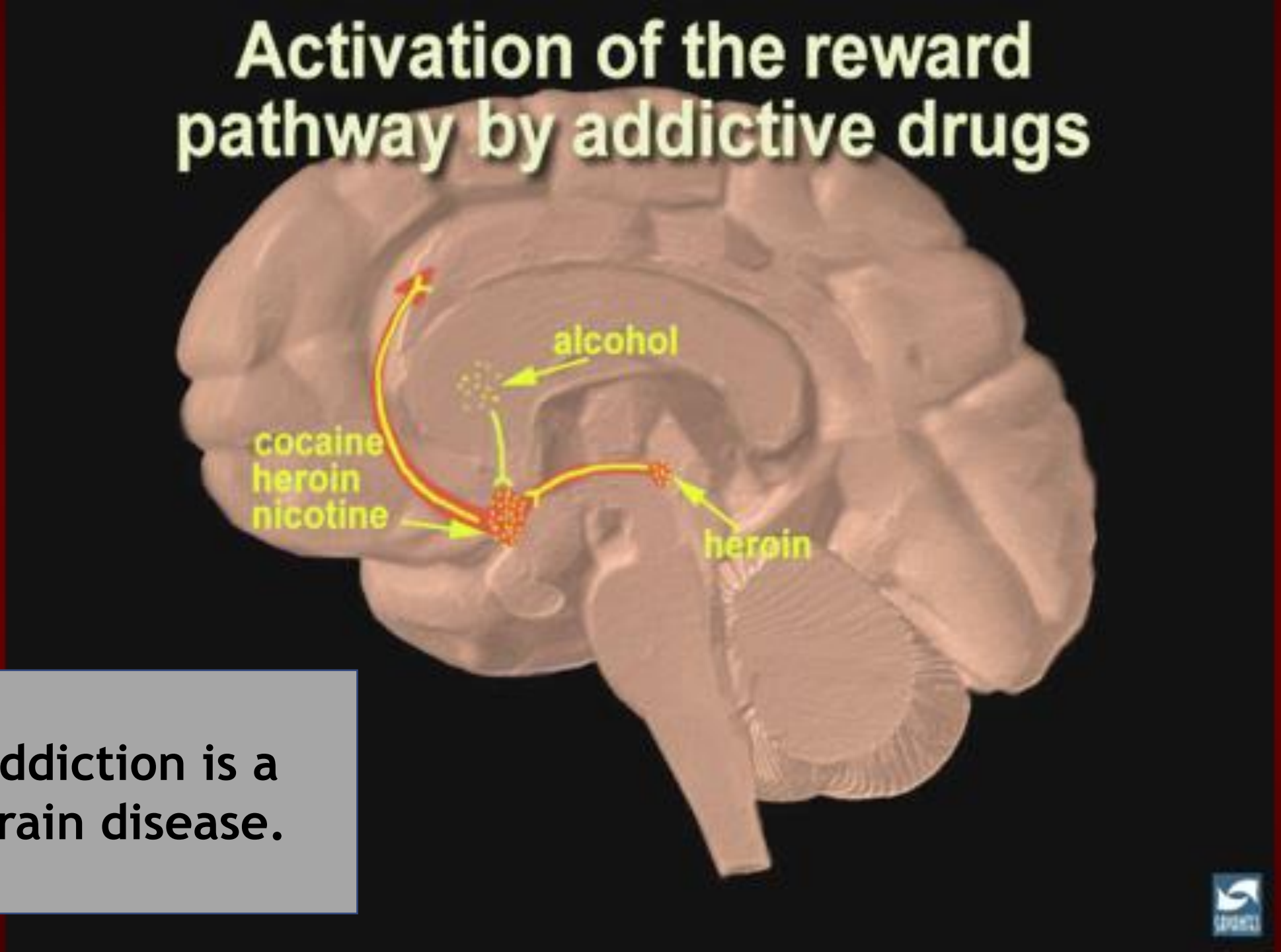
- To cope with physical pain.
- To stop dissociation and flashbacks.
- To feel some pleasure or excitement.
- To let out their anger.
- Peer pressure.

More Reasons Why People with PTSD Use Substances

- It was common in the military.
- To socialize with other people.
- Boredom.
- To get through the day.
- Family members drank or used drugs when they were growing up.

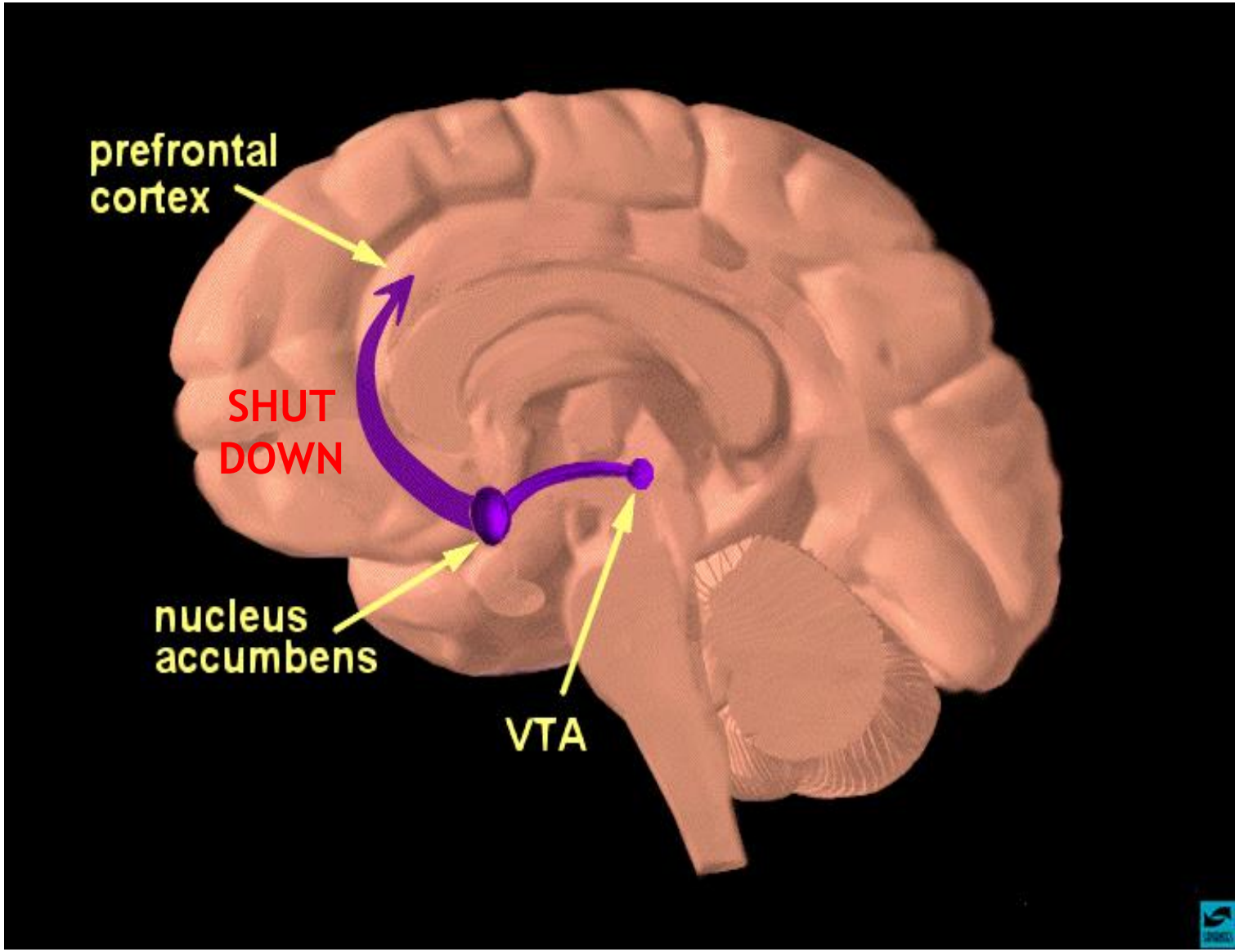
More Reasons Why People with PTSD Use Substances

- To reward themselves.
- To celebrate.
- To feel something, anything.
- To show people how bad they feel.
- To commit “slow suicide”.



Addiction is a brain disease.

The Brain's Reward System



- At first, substances excite the release of dopamine
- Over time, tolerance develops, requiring more of the substance to release dopamine
- Eventually, substances are used to prevent withdrawal and just to keep going

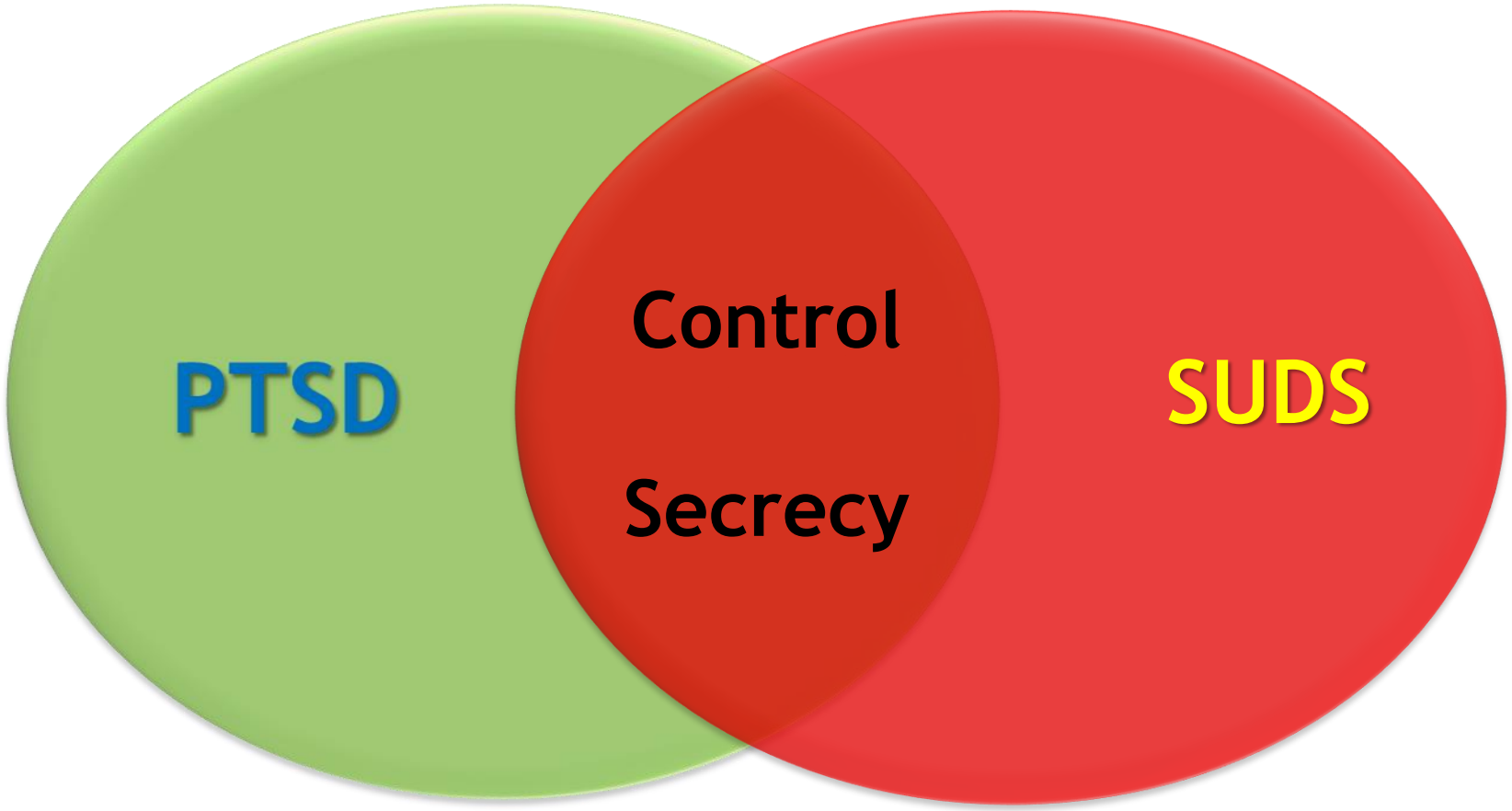
Treating Everyone with a Substance Abuse Problem as If They Self-Medicate Is Like….

Takeaways

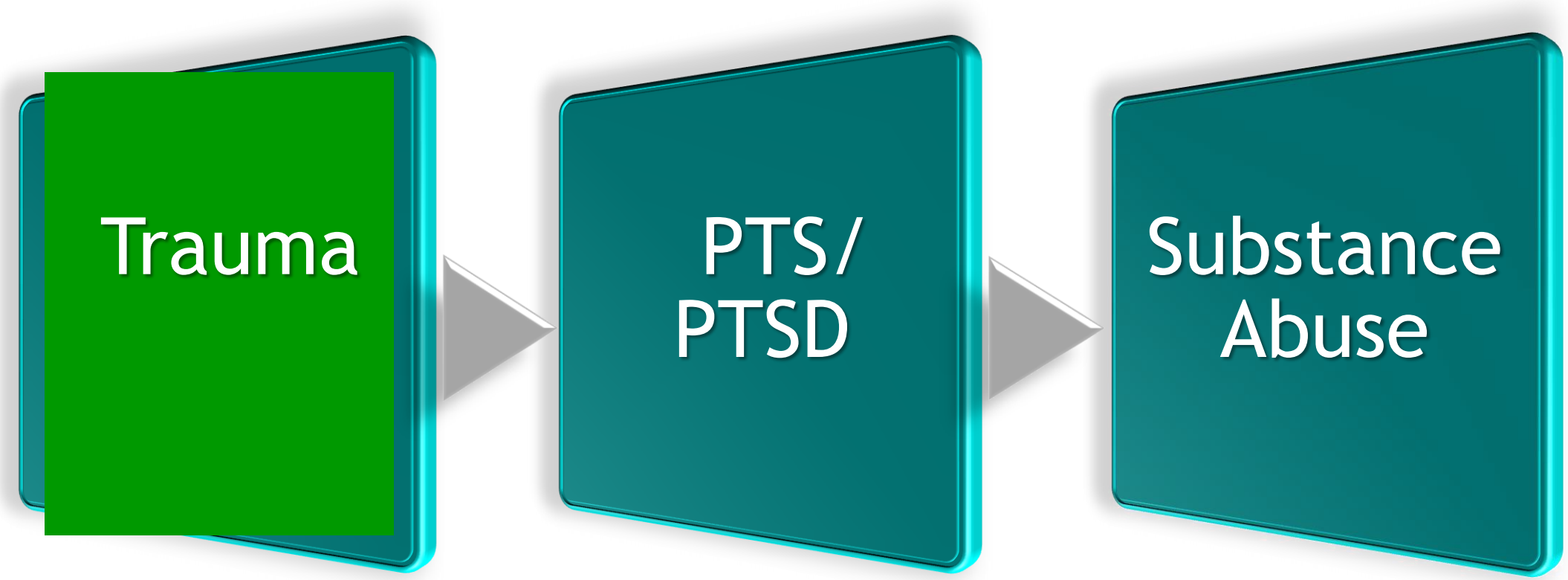
- There are many reasons people use substances.
  - If they have been using substances for a long time, they may just want to feel normal.
  - There may be more than one reason they are using them now.
    - Don’t settle for just one reason. Keep asking until they are done.
  - You must address every reason in treatment for it to be successful.
- Reasons may change over time.
  - Therefore, you must ask:
  - Why did you start using substance?
  - How did that change over time?
  - Why do you use them now?

Ways That PTSD and Substance Abuse Influence Each Other

PTSD and Substance Abuse Share Two Main Themes



1. Trauma Occurs First, Then Substance Abuse (Self-Medication)

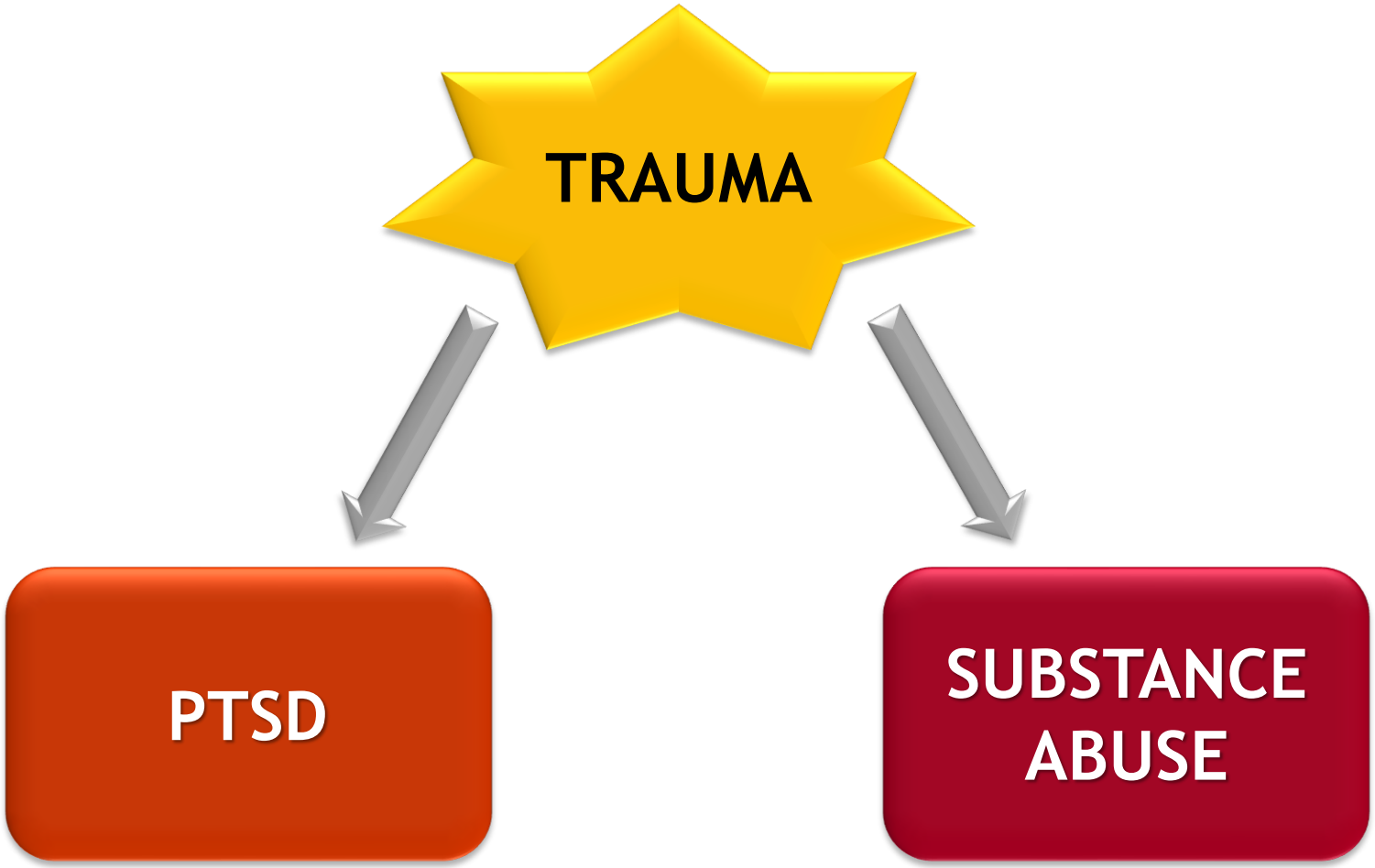


Najavits, 2017

2. Substance Abuse Occurs First, Then Trauma

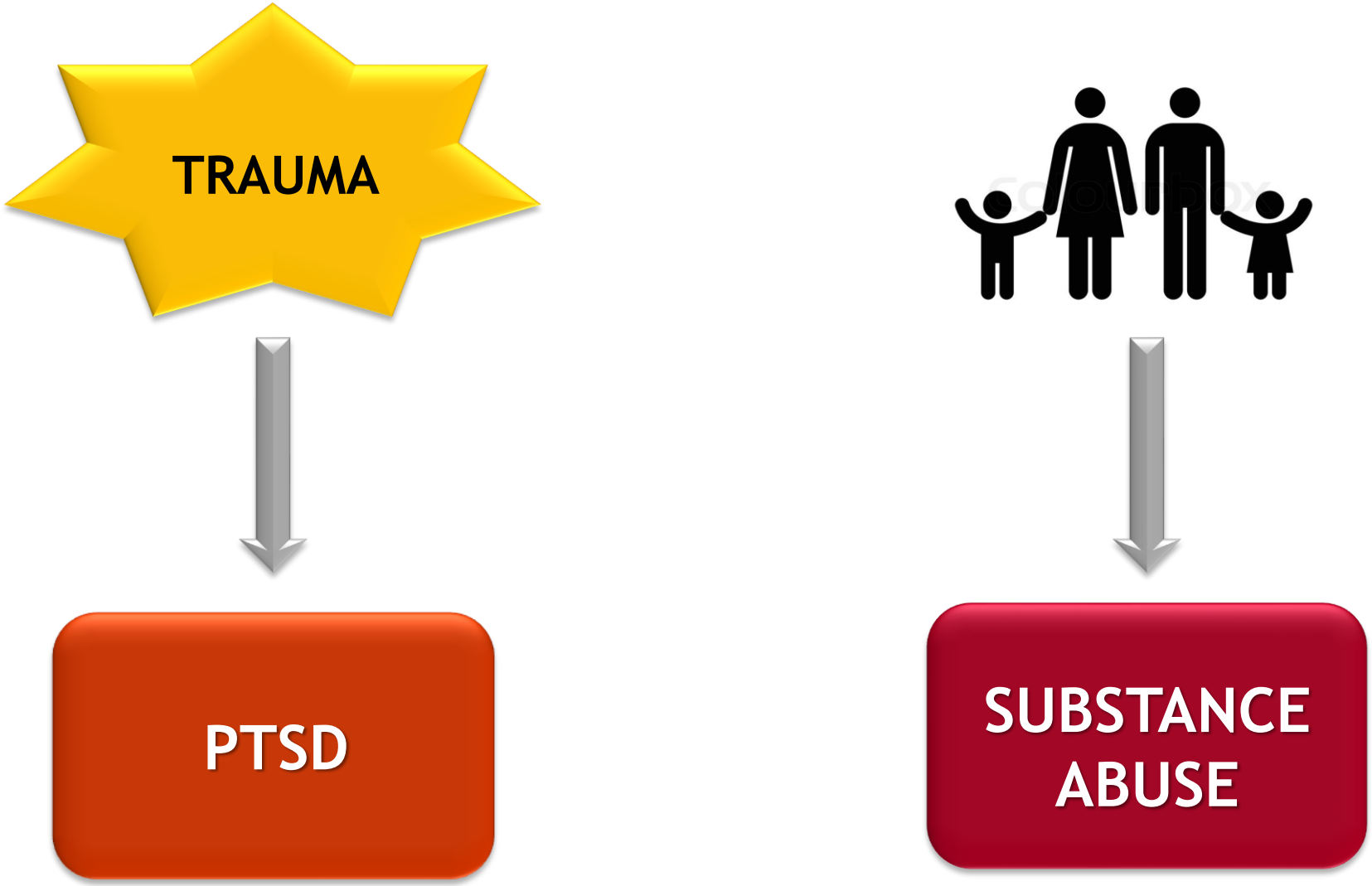
Najavits, 2017

3. PTSD and Substance Abuse Arise Together from Trauma



Najavits, 2017

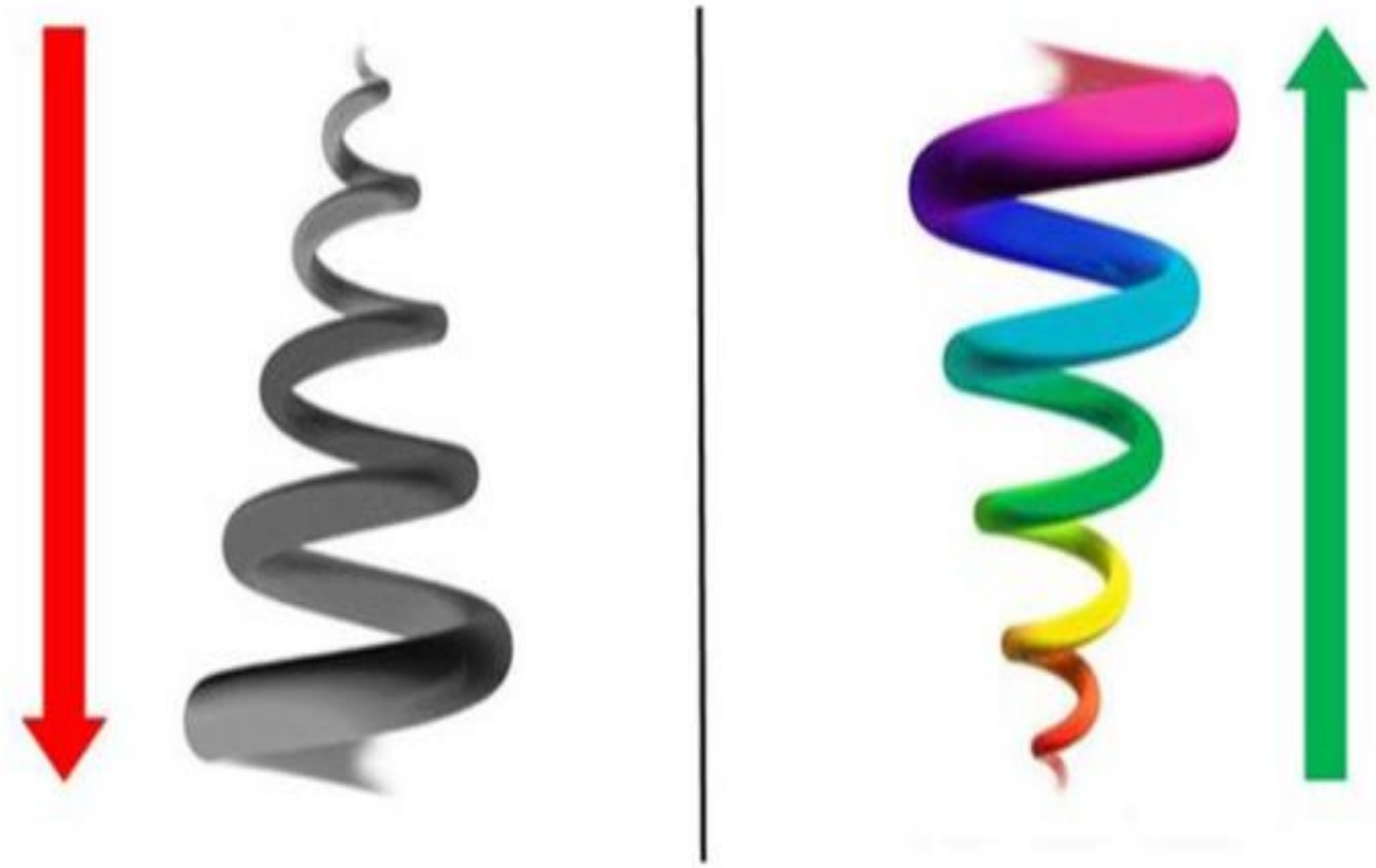
4. PTSD and Substance Abuse Arise Separately



Najavits, 2017

5. PTSD and Substance Abuse Feed Off Each Other

PTSD and substance abuse make each other worse in a downward spiral



Improvements in PTSD and substance abuse make each other better in an upward spiral

Najavits, 2017

Q: Does substance abuse make PTSD symptoms better or worse?

Q: Does substance abuse make PTSD symptoms better or worse?

A: Both.

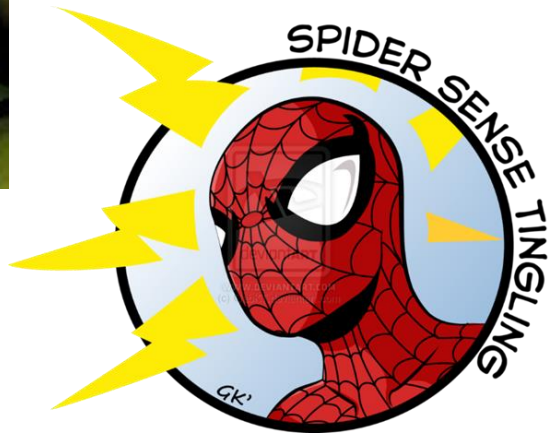
Substance Abuse May Temporarily Make Some PTSD Symptoms Better

- Examples:
  - Alcohol blackouts can make people think they are overcoming insomnia, even though REM sleep and deep restful sleep are disrupted by drinking
  - Cocaine can make people feel excited rather than numb
  - Opioids can modulate anxiety (Wilson & Junor, 2008)
  - Marijuana can make a person more sociable and less isolated
- If substances didn't make people feel better temporarily, few people with PTSD would use substances

Substance Abuse Can Also Make PTSD Symptoms Worse

- Nightmares
- Bodily reactions like sweating and increased heart rate
- Avoidance
- Isolation
- Numbing
- Memory problems
- Depression
- Loss of interest in previously enjoyed activities

Substance Abuse Can Also Make PTSD Symptoms Worse



- Distrust of others
- Inability to experience positive emotions
- Aggressive behavior
- Risk-taking behavior
- Hypervigilance
- Difficulty concentrating
- Insomnia
- Dissociation

Co-Occurring PTSD and SUDs Make Each Other Worse

- Substance abuse exacerbates PTSD symptoms, including sleep disturbance, nightmares, rage, depression, avoidance, numbing of feelings, social isolation, irritability, hypervigilance, paranoia, and suicidal ideation
- People who drink or use drugs are at risk for being retraumatized through accidents, injuries, and sexual trauma

Q: Does abstinence make PTSD symptoms better or worse?

Q: Does abstinence make PTSD symptoms better or worse?

A: Both.

Abstinence Can Make PTSD Symptoms Better

- Abstinence from alcohol can result in increased energy and interest in previously enjoyed activities, as well as decreased depression and aggression
- Abstinence from marijuana can decrease distrust and paranoia
- Abstinence from opioids can increase energy and concentration, as well as improve memory
- Abstinence from cocaine can decrease paranoia, irritability, and insomnia

Abstinence Can Make PTSD Symptoms Worse

- Abstinence from alcohol can result in anxiety, insomnia, and impaired attention
- Abstinence from cocaine can result in agitation, anxiety, depression, and nightmares
- Abstinence from opioids can increase insomnia, nightmares, irritability, and startle responses
- Abstinence from marijuana can increase anxiety and social isolation
- Abstinence can lead to a flood of feelings that have been dammed up
  - The flood is temporary

Takeaways

- Trauma makes people vulnerable to addiction; addiction makes people vulnerable to trauma
- You have to respect the person's ambivalence about giving up substances
  - Very few people walk into court without mixed feelings about giving up substances
- People do not have to be absolutely certain they want to give up substances in order to become abstinent
- It's important not to present abstinence as making their PTSD better
  - Instead, let them know that some people feel better right away, and that others feel worse temporarily (2 weeks - 6 months)

More Takeaways

- Even if PTSD underlies substance abuse, and the person is self-medicating, ending PTSD does not end substance abuse
  - PTSD can get better without ending substance abuse (Mills et al., 2012)
  - That is because:
    - Substance abuse can become addiction
    - The problems that result from substance abuse do not go away even if PTSD gets better
- Even if the person becomes abstinent, PTSD does not resolve
  - This is certainly true if the person is self-medicating
  - Many of the symptoms of PTSD do not overlap with substance abuse

How Substance Abuse Prevents Healing from PTSD

Where Substance Abuse Fits in Diagnostic Criteria for PTSD

- Exposure to a severe life-threatening event
- Repetitive re-experiencing of the event
- Avoidance of stimuli associated with trauma
  Substance abuse is a form of avoidance
  Therefore, abusing substances is a form of practicing PTSD
- Negative moods and cognitions
- Increased arousal

Ways That Substance Abuse Prevents Healing From PTSD

- It prevents a person from knowing themselves
- It does not meet a person's needs
- It stalls their emotional development
- It isolates them

Najavits, 2002

Ways That Substance Abuse Prevents Healing From PTSD

- It makes many PTSD symptoms worse
- It keeps a person from coping with their feelings
- It takes away a person's control
- It makes them hate themselves
- It is a way of neglecting themselves

Najavits, 2002

Takeaway

- Substance abuse and PTSD can be leveraged against one another
  - You can ask how badly a person wants to get over their PTSD
  - Often they will want to get over it badly enough to give up the temporary relief of substances for the more permanent relief that comes from evidence-based PTSD treatment

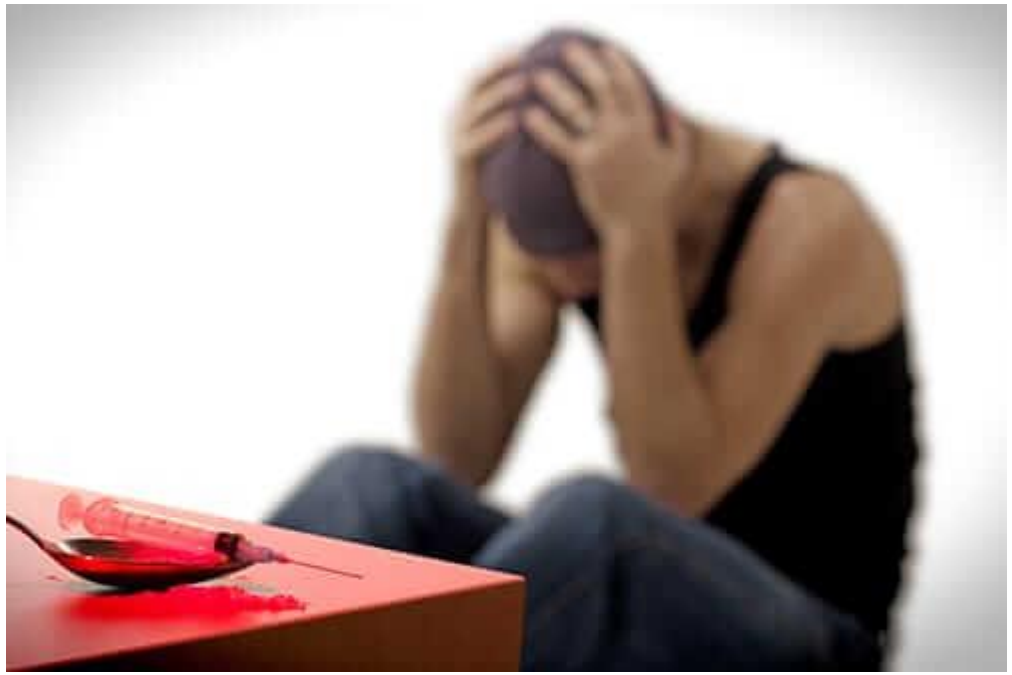
It’s Not Just PTSD and Substance Abuse: They Co-Occur with Other Problems

Complex PTSD and Substance Abuse

- People with Complex PTSD are likely to abuse substances
- Criterion D of Complex PTSD in ICD 11:

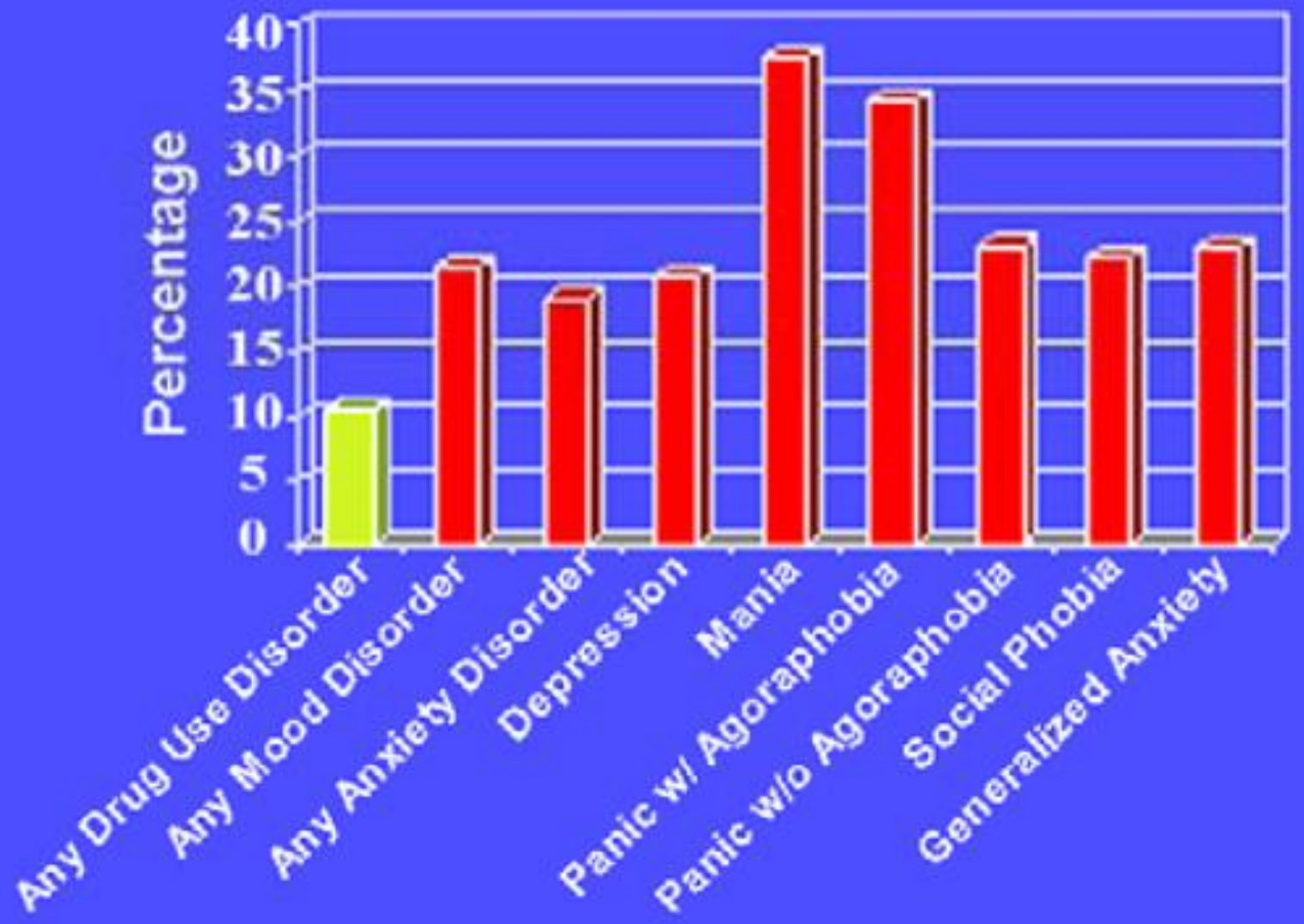
  Dysregulated Behavior
  - Self-injurious behavior
  - Hypersexual behavior
  - Addictive behavior

Co-Morbid Depression

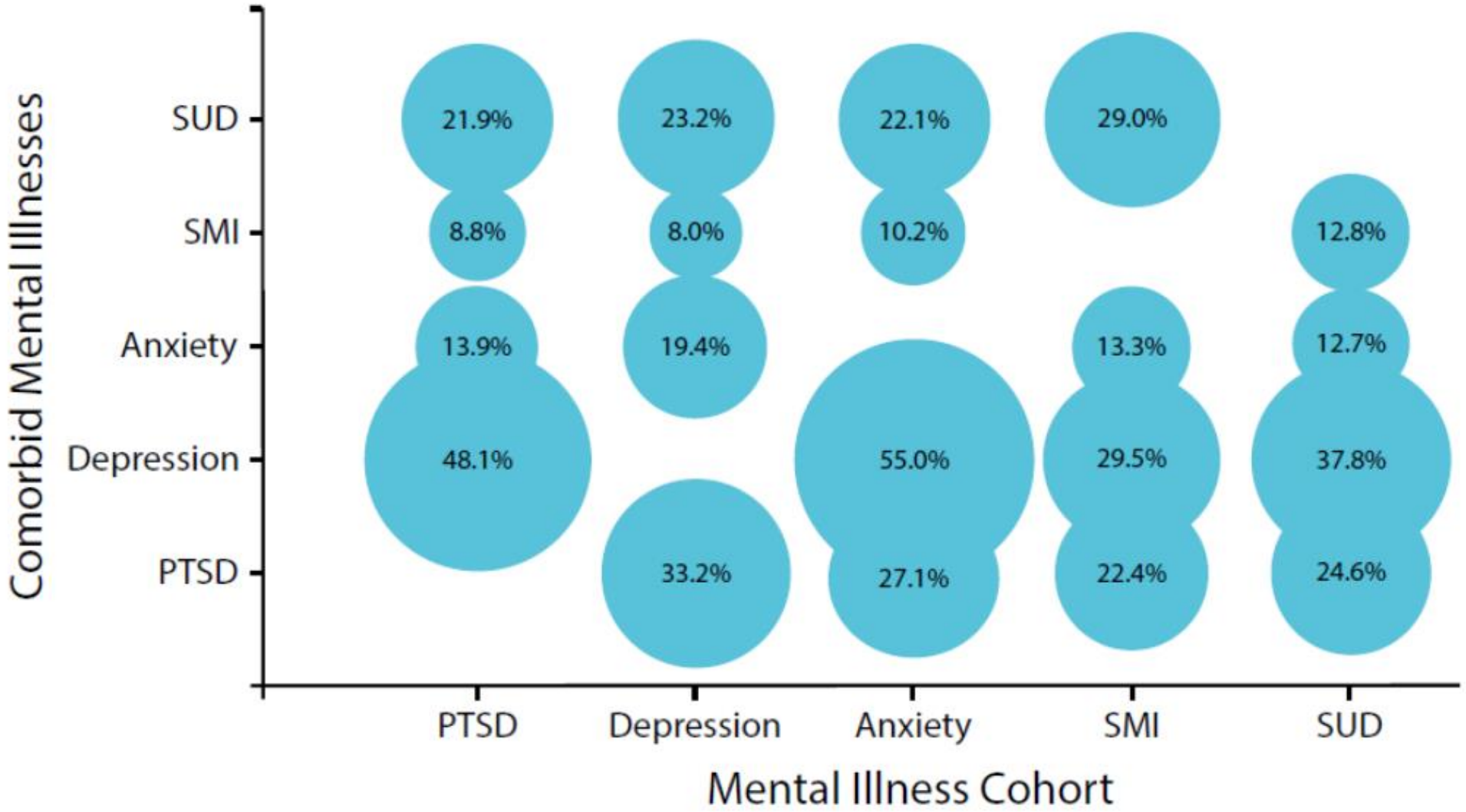


- Approximately one-half of people with PTSD also have depression (Caramanca et al., 2014; Kessler et al., 1995; Rytwinski et al., 2013)
- People with substance use disorders are more likely to be depressed
  - Some substances can induce a mood disorder, including alcohol (Awawori et al., 2017; Connor et al., 2009)
- Nearly 1/3 of people with Major Depressive Disorder also have substance use disorders (Davis et al., 2008)

Lifetime Prevalence of Drug Disorders Among Persons With Mood and Anxiety Disorders



Conway, Compton, Stinson and Grant. J. Clin. Psychiatry, February 2006

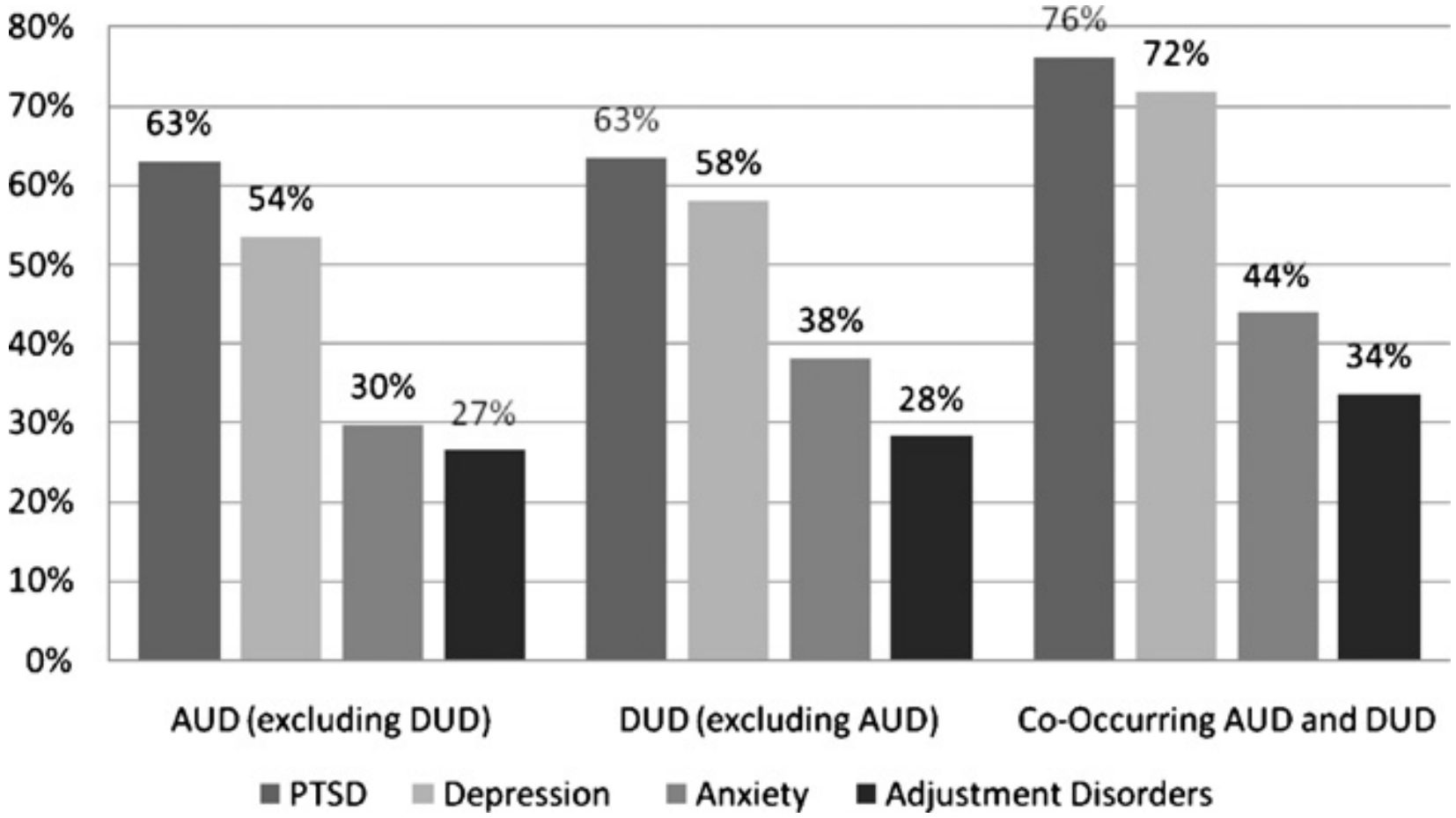


Note. PTSD = posttraumatic stress disorder; SMI = serious mental illness; SUD = substance use disorder.

FIGURE 1—Comorbidity of 5 mental illnesses among US veterans: 2010–2011.

Trivedi et al., 2015

Co-Morbid Mental Health Disorders in OEF-OIF Veterans in VA 2001-2010



N = 456,502, of which 51,985 have AUD, DUD, or both

Seal et al., 2011

Substance Abuse and Insomnia

- Substance Abuse can create sleep disorders
  - Every stimulant abuse worsens insomnia: cocaine, caffeine, nicotine, ADHD medications, etc.
  - 28% of people with insomnia use alcohol to try to sleep, but
    - Drinking results in waking up 2½ - 3 hours later to urinate
    - Alcohol disrupts the sequence and duration of sleep states
    - Alcohol consumed within 1-6 hours of bedtime disrupts the 2nd half of sleep (NIH, 1998)
    - Drinking results in a decrease in total sleep time

Substance Abuse and Insomnia

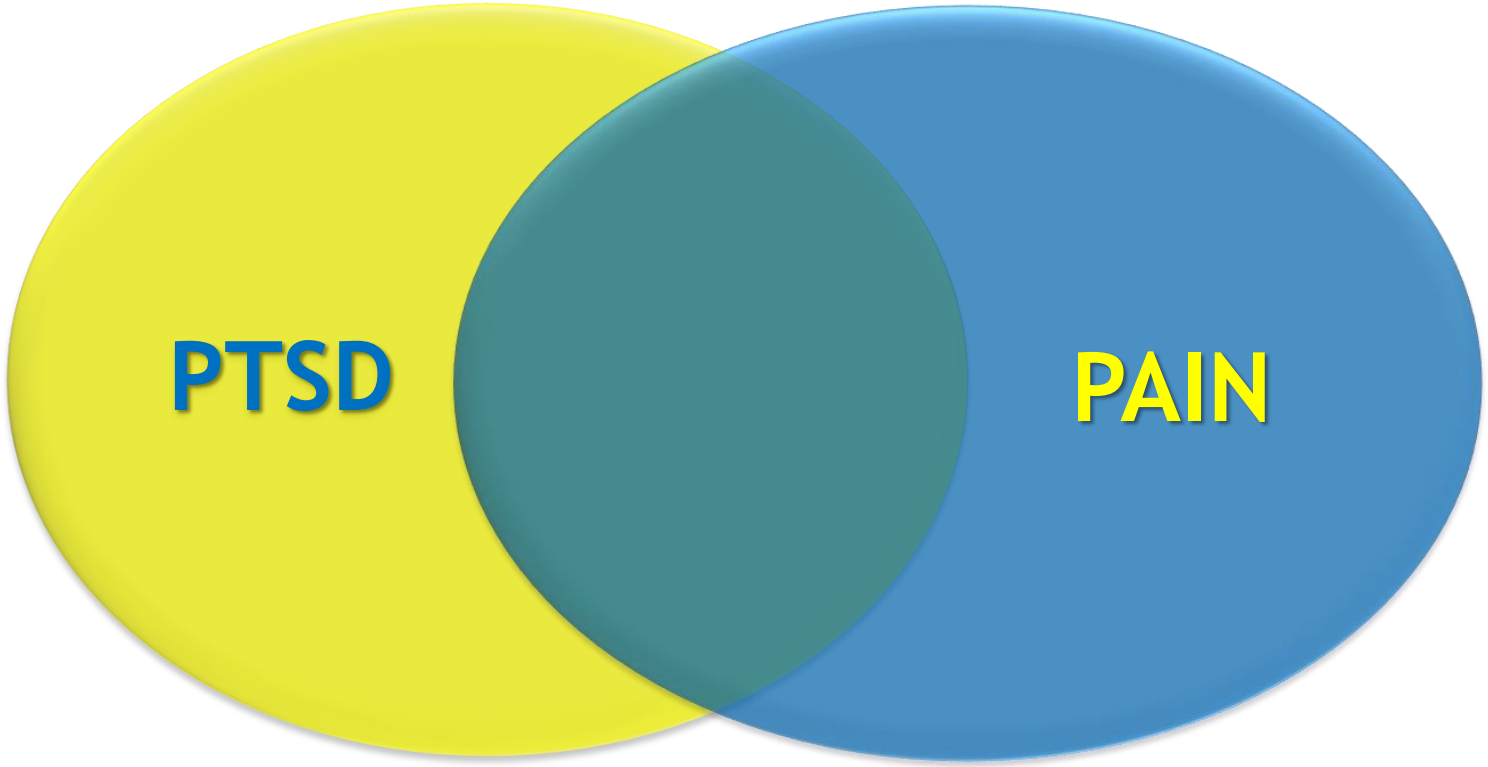
- Opioids cause both sedation and wakefulness (De Andres & Caballero, 1989)
  - Veterans with chronic pain who were prescribed opioids are more likely to report sleep disruption than those who did not take opioids (Morasco et al., 2014)
  - Heroin causes alternation between oversleeping due to sedation and severe sleeplessness
    - It also results in poor sleep quality
- Marijuana decreases slow wave sleep and REM sleep
  - It also decreases sleep quality

High Co-Morbidity of Insomnia

- Insomnia is one of 20 characteristics of PTSD
  - It frequently continues even after PTSD is successfully treated
- Insomnia has a bidirectional relationship with depression
  - 85% of depressed people have insomnia
- Pain is the #1 medical cause of insomnia
  - Of those with chronic pain, 65% have insomnia
  - People with insomnia have higher pain sensitivity (Sivertsen et al., 2015)

PTSD Is Closely Associated with Chronic Pain

- Multiple studies show a strong relationship between PTSD and chronic pain (e.g., Asmundson et al., 2002; Cohen et al., 2004; Otis et al., 2003; Sharp & Harvey, 2001; Shepherd et al., 2001; Villanoe et al., 2007)



Co-Morbidity of PTSD and Chronic Pain

- PTSD Samples:
  - 66-80% of individuals diagnosed with PTSD experience chronic pain (Beckham et al., 1997; Jakupcak, Osborne, Michael, Cook, Albrizio, & McFall, 2006; Shipherd et al., 2007)
- Pain Samples:
  - 34% - 50% of civilians with chronic pain are diagnosed with PTSD (Geisser et al., 1996; Asmundson, et al., 1998)

The Effects of PTSD, SUDs, and Pain on Sleep

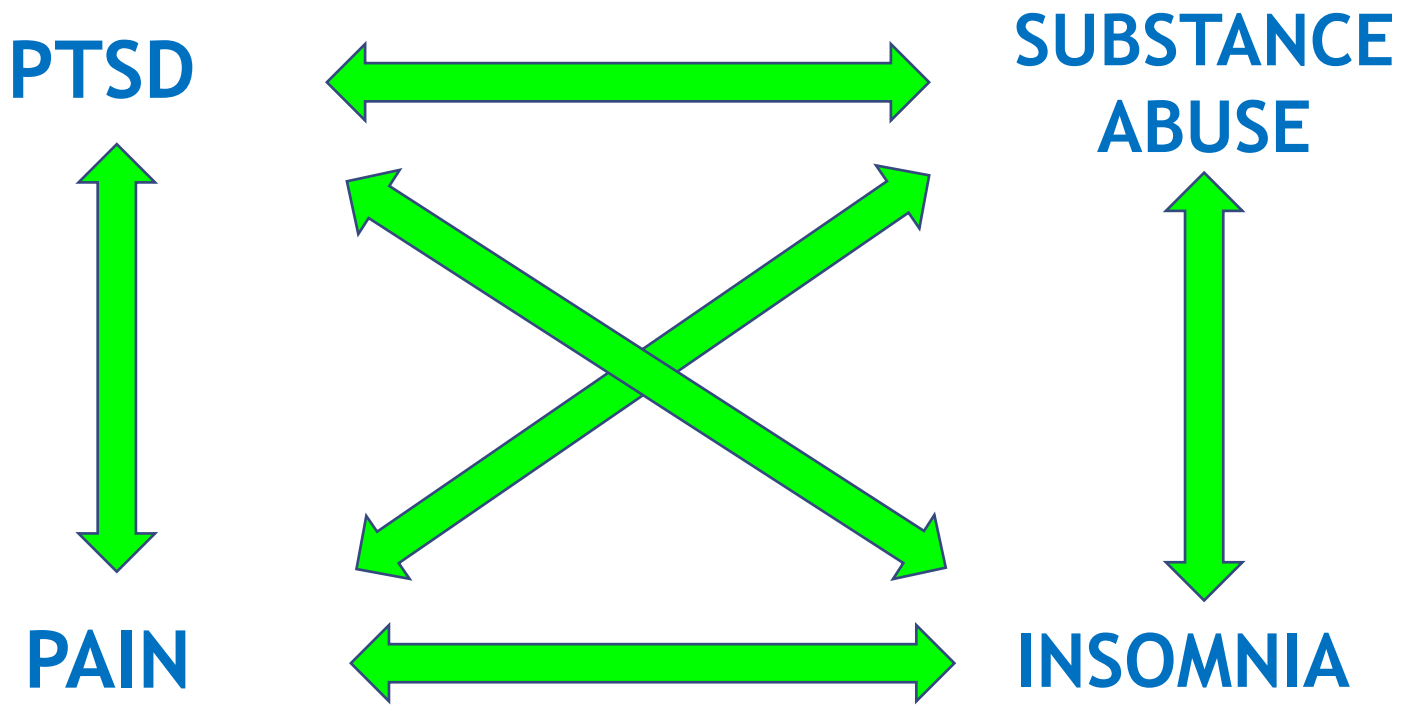
- Insomnia is one of 20 defining criteria of PTSD
  - Nightmares are another
- All substances interfere with sleep stages and patterns
- Chronic pain interferes with sleep
- Lack of sleep worsens PTSD and pain
- Therefore, problematic sleep must be addressed to treat the confluence of PTSD, SUDS, and pain

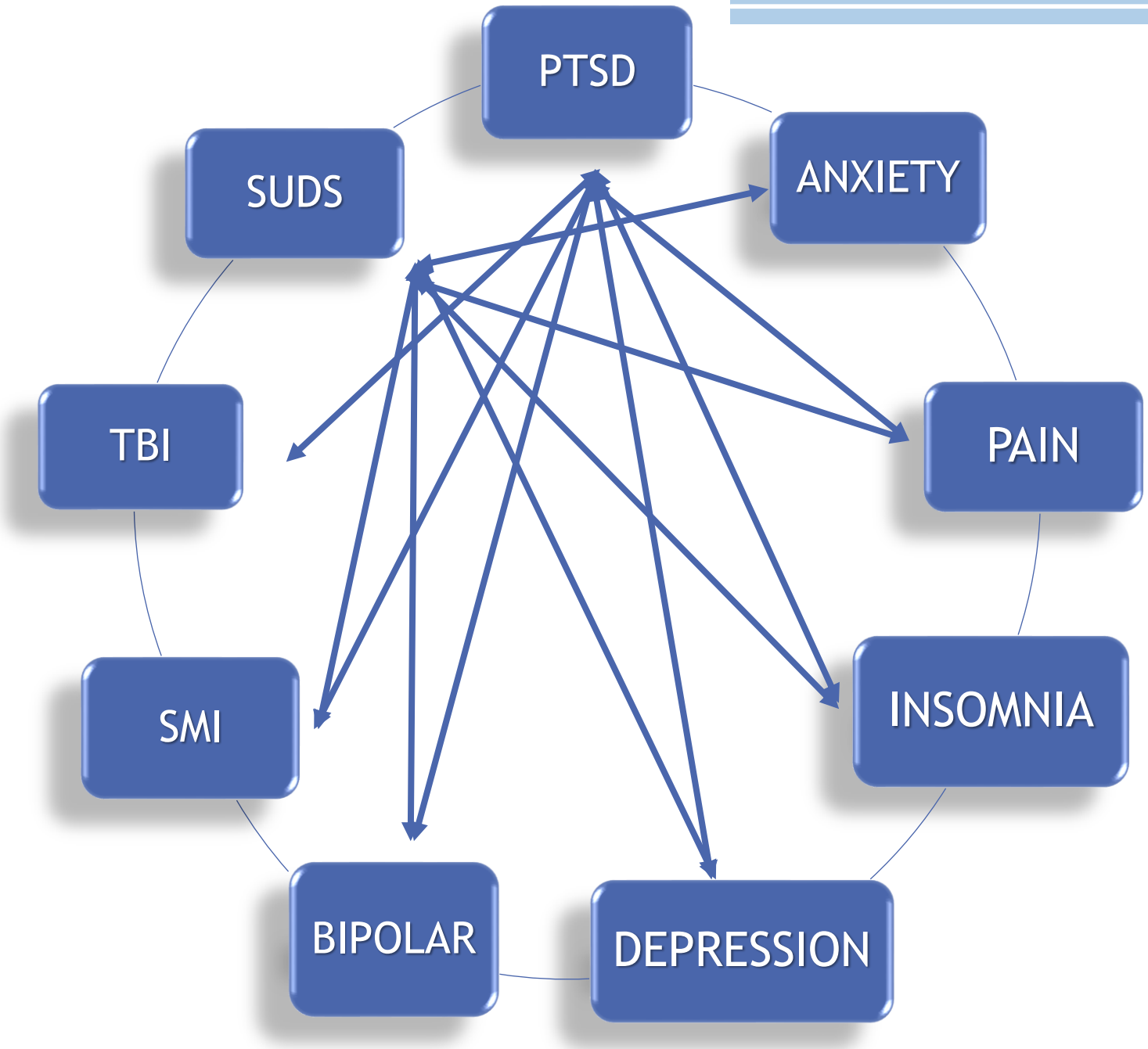
Addiction Increases Risk for Chronic Pain

- Sympathetic arousal
- Sleep disorders
- Anxiety and Affective Disorders
- Development of tolerance and physical dependence
- Increased stress with HPA axis activation
- Increased risk for trauma

Bruinjnzeel et al., 2004

Relationships between PTSD, Pain, Substance Abuse, and Insomnia



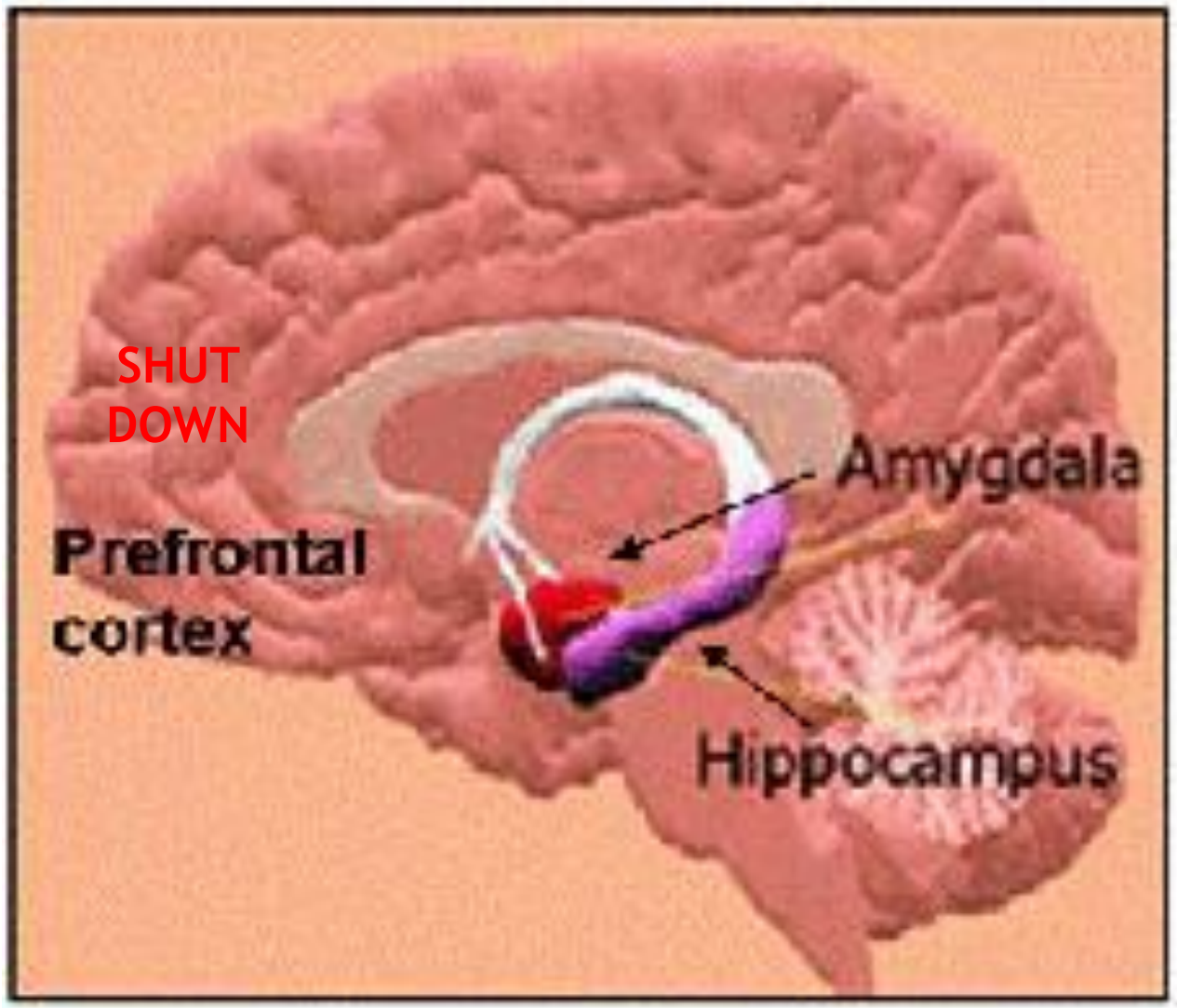

PTSD
ANXIETY
PAIN
INSOMNIA
DEPRESSION
BIPOLAR
SMI
TBI
SUDS

Takeaways

- Other co-morbid problems reinforce symptoms of PTSD and substance abuse
- Other co-morbid problems make it more difficult to resolve PTSD and substance abuse
  - Therefore, it is best to use integrated treatments and treatments that address multiple problems

The Effects of Co-Occurring PTSD and Substance Abuse

PTSD and the Brain

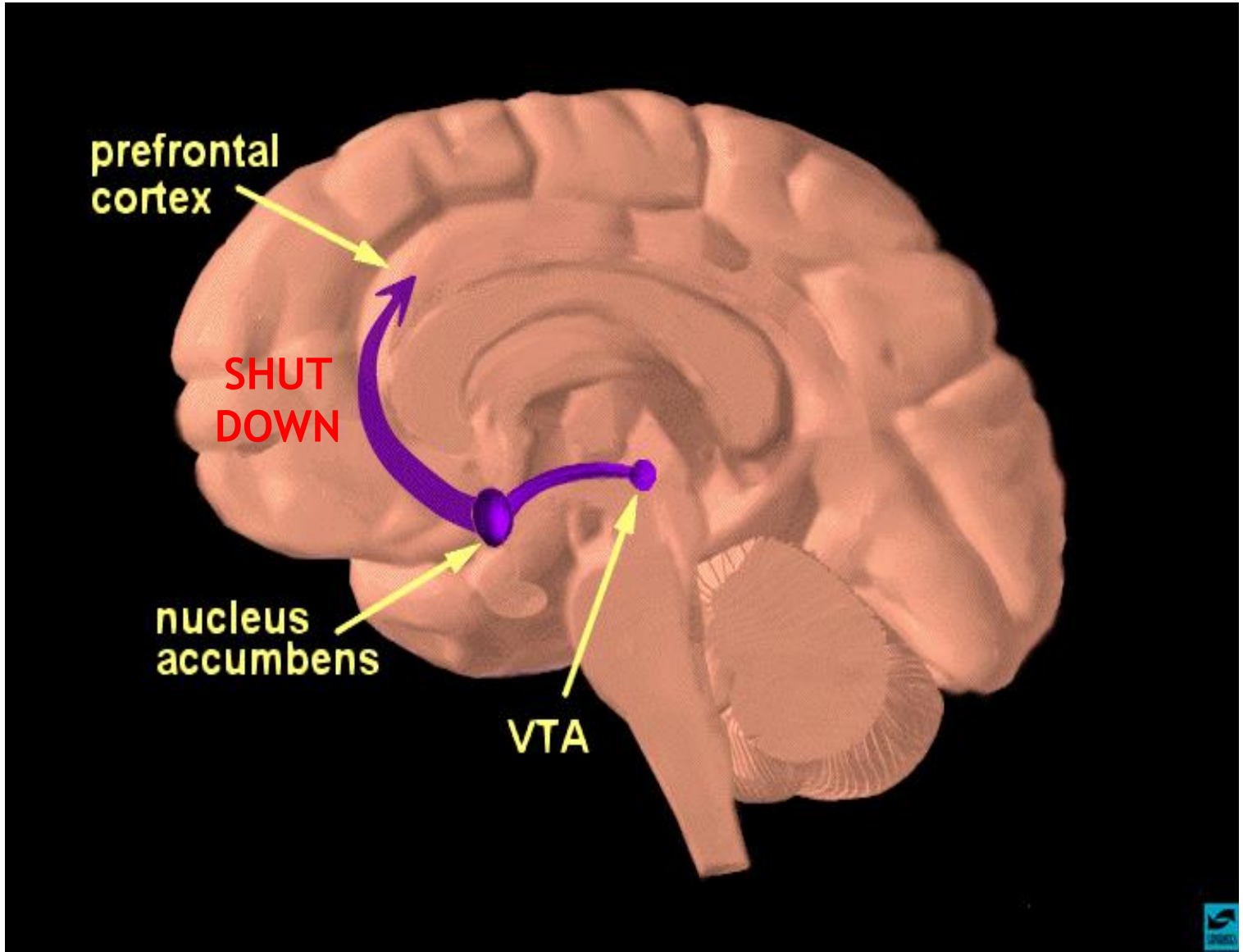


Amygdala – Emotional reactions, fight or flight alarm system

Hippocampus – Relay station for sorting memories

Prefrontal cortex – logic, reasoning, planning, impulse control, organizing

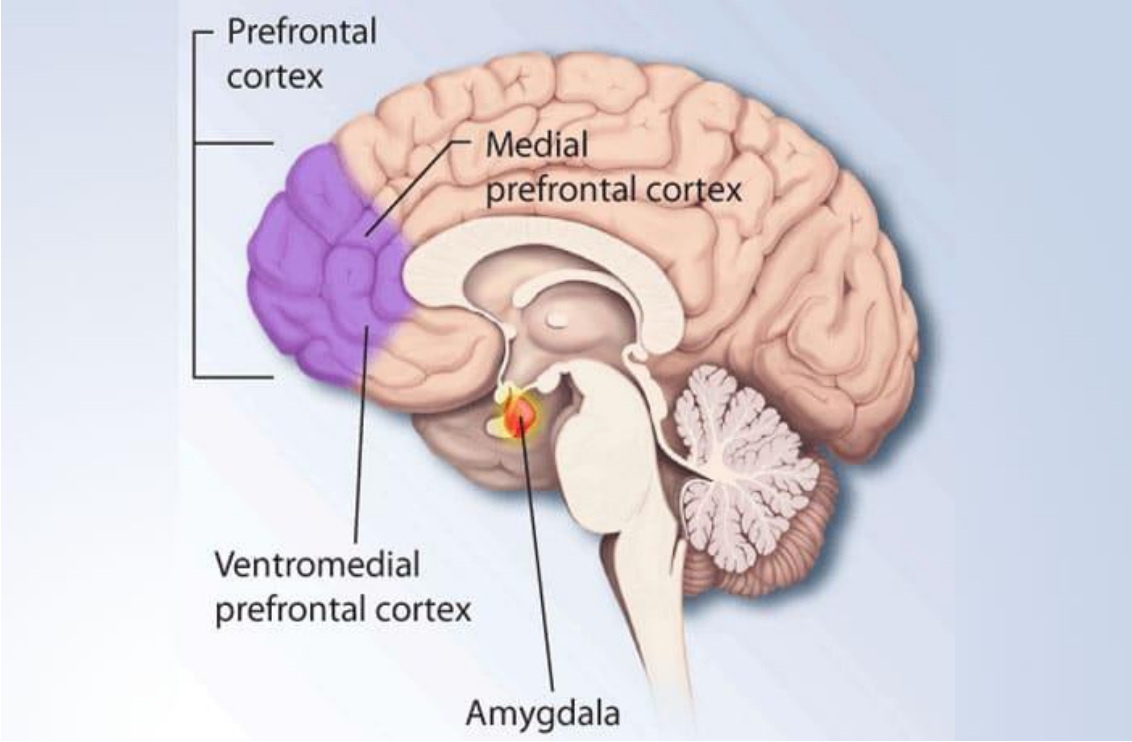
The Brain's Reward System



Robeck, 2013

Shutting Down the Ventromedial Prefrontal Cortex Leads to:

- Emotional dysregulation
- Acting on impulse
- Not considering consequences of actions
- Decrease in logical thinking
- Inappropriate social behavior
- Decreases in empathy, compassion, shame, and guilt
- Impaired decision-making



PTSD and Substance Abuse Increase Violence

- Alcohol Use combined with PTSD significantly increases the likelihood of violence (Elbogen et al., 2011; Forbes et al., 2008; Steindl eta al., 2003)
  - This is likely due to the disinhibiting effects of alcohol

PTSD/SUD Patients Have Significantly More Problems

- Other Axis I disorders
- Increased psychiatric symptoms
- Increased inpatient admissions
- Medical problems
- Decreased motivation for treatment
- Decreased compliance with aftercare

PTSD/SUD Patients Have Significantly More Interpersonal Problems

- Interpersonal problems
- Divorce (Breslau et al., 2013)
- Maltreatment of children
- Custody battles
- Violence (Elbogen et al., 2014)

PTSD/SUD Patients Have Significantly More Problems

- Unemployment (Henkel, 2011)
- Academic dropout (Breslau et al., 2011)
- Incarceration (Nowotny et al., 2014)
- Homelessness (Palepu et al., 2013)
- HIV risk

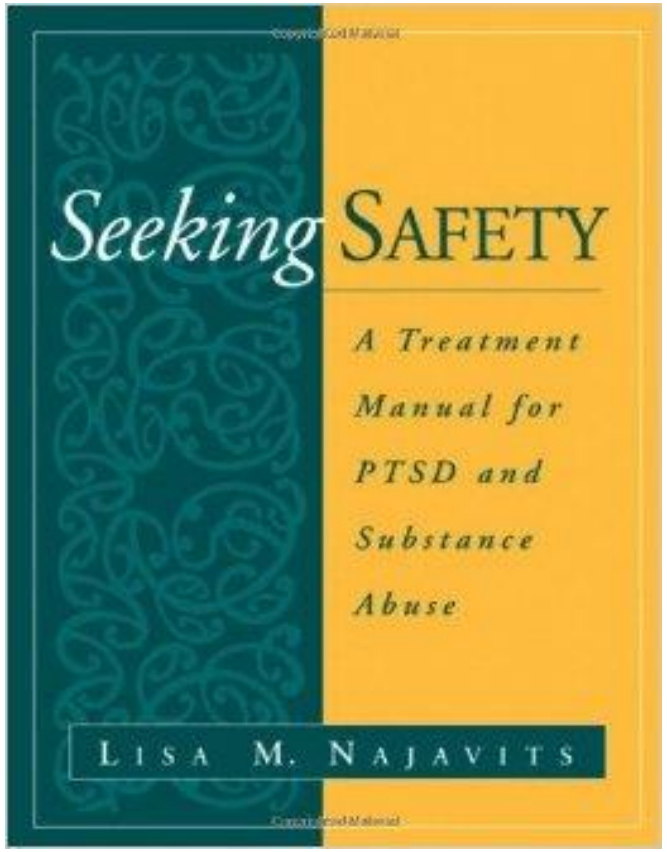
Takeaways

- People with both PTSD and Substance Use Disorders have significantly worse outcomes
- They are also harder to keep in treatment
- They require extra efforts on the part of clinicians to engage

Integrated Treatment of PTSD and Substance Abuse: Seeking Safety

Seeking Safety

Seeking Safety is the only evidence-based treatment for co-morbid PTSD and substance abuse



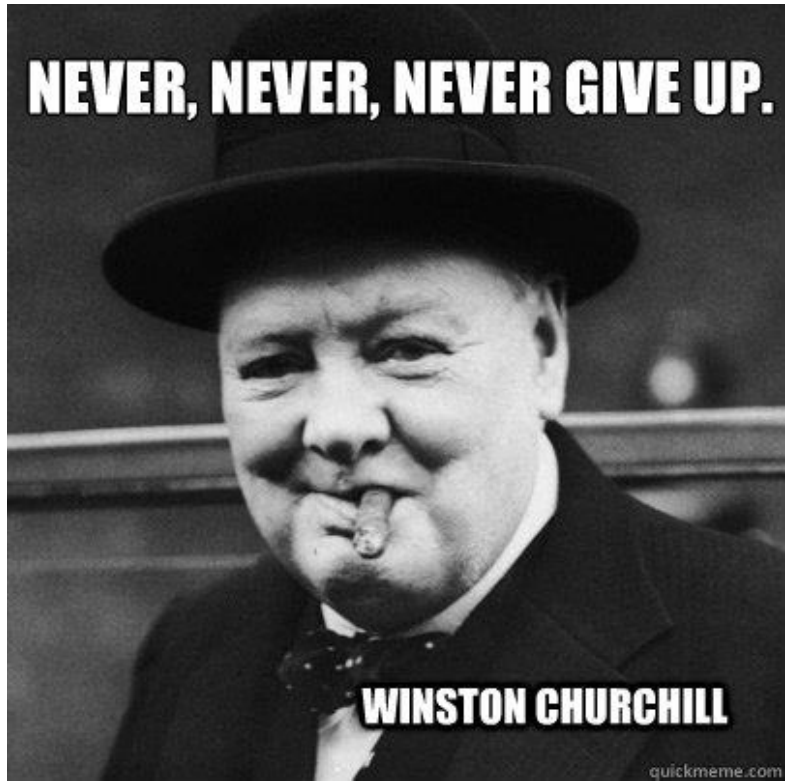
- 25 lessons on topics that overlap between PTSD and Substance Abuse
  - Safe coping skills
  - Asking for help
  - Grounding
  - Anger
  - Boundaries
  - Self-care
  - Honesty
  - Re-thinking

Seeking Safety

- Weekly 90 minute sessions
- Often taught in 12 sessions
- Can be provided individually or in groups
- Typical group size is 8-10 members
- Can be provided by professionals or paraprofessionals

Seeking Safety Session Structure

- Check-in (3-5 minutes per person)
  - Used to elicit information to be discussed during the course of the session
- Quotation
- Topic of the day (50 minutes)
- Check out with commitment



Seeking Safety

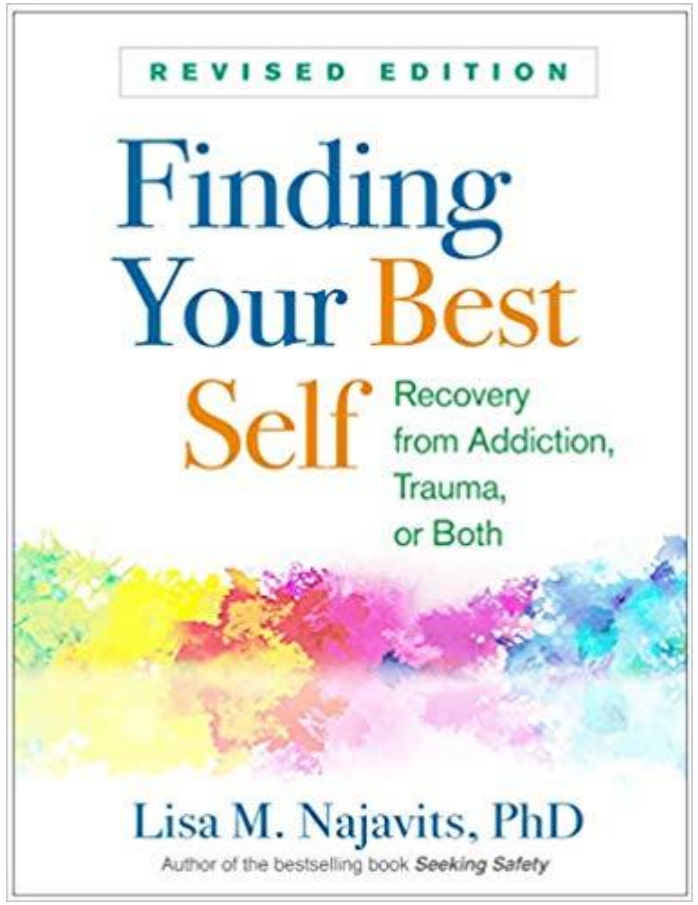
- 6 randomized controlled trials and 3 controlled studies
- Seeking Safety has shown positive results across all studies (Najavits & Hien, 2013)
- Populations include:
  - Women outpatients, inpatients, Veterans, homeless women, rural women, and women in prison;
  - Men outpatients, inpatients, and Veterans;
  - Adolescent girls; and
  - Young African-American men

RESOURCES

PTSD and SUDs

- *Trauma and Substance Abuse (2nd ed.)* by Page Ouimette and Jennifer Read
- PTSD 101 course about treating PTSD and SUDs: www.ptsd.va.gov/professional/ptsd101/course-modules/SUD.asp
- Practice recommendations for treating co-occurring PTSD and SUDs: www.ptsd.va.gov/professional/pages/handouts-pdf/SUD_PTSD_Practice_Recommend.pdf

Seeking Safety

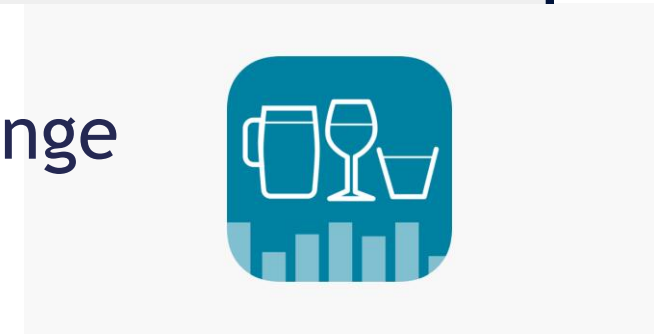


- *Seeking Safety* (2002), Lisa Najavits
- *Finding Your Best Self* (2019), Lisa Najavits
- http://www.treatment-innovations.org/seeking-safety.html

VetChange:
A Free Program to Treat PTSD and Alcohol Abuse

- Online version: https://vetchange.org/home/index2

- App version: VetChange



Contact:
Brian L. Meyer, Ph.D.
brianlmeyerphd@gmail.com