MASSACHUSETTS GENERAL HOSPITAL
PSYCHIATRY ACADEMY

What's New In Addiction?
Treating Addiction As A Chronic Disease

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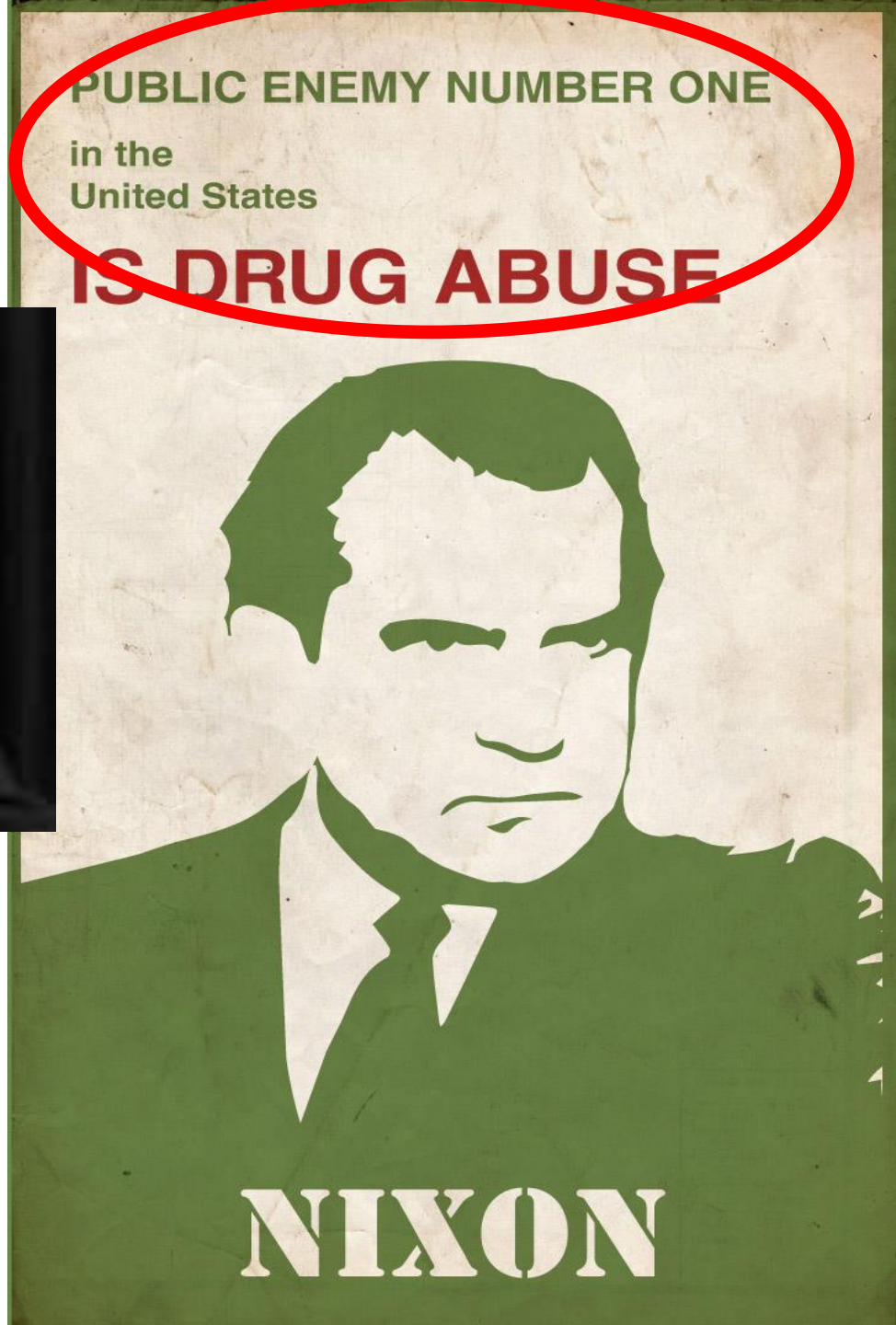
Disclosures

Neither I nor my spouse/partner has a relevant financial relationship with a commercial interest to disclose.

1970

During the past 50 yrs since “War on Drugs” declared, we have moved from “Public Enemy No. 1” to “Public Health Problem No. 1”



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The Last 50 Years in Addiction Laws

1965

Reorganizational Plan No. 2
Creation of the Drug Enforcement Agency (DEA), consolidating a number of different entities to form a single federal agency to enforce government drug control policy.

1970

Controlled Substances Act (CSA):
Part of the larger Comprehensive Drug Abuse Prevention & Control Act of 1970, the CSA estalished U.S. drug control policy & created 5 schedules (classifications) of drugs to determine the legality of a substance & corresponding legal ramifications.

1973

Charitable Choice
Charitable choice allows direct U.S. government funding of religious organizations to provide substance use prevention & treatment.

1986-1988

Anti-Drug Abuse Act
1st passed in 1986, & then ammended in 1988, the act created the policy goal of a drug-free America, created the Office of National Drug Control Policy (ONDCP), changed the federal probation & release system from a rehabilitative to a punitive (punishment focused) model, enacted minimum mandatory sentencing for drug posession & distribution (100:1 crack/ powder cocaine sentencing disparity), & prohibited controlled designer drugs.

1996

Sober Truth on Preventing Underage Drinking Act (STOP Act)
Passed in 2006, the STOP act created a grant program to target underage drinking within communities & established the federal Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD) with high-level leadership from across 15 federal agencies to coordinate government efforts to address underage drinking.

2006

Mental Health Parity & Addiction Equity Act (MHPAEA)
Enacted in 2008, the MHPAEA closed loopholes in the Mental Health Parity Act of 1996 by requiring insurance companies to offer coverage for mental & substance use disorders that is equal to the coverage or benefits offered for other medical or surgical care (e.g. deductibles, co-pays, out-of-pocket maximums, treatment limitations).

2008

Fair Sentencing Act
Passed in 2010, the act reduces the sentencing disparity between crack & powder cocaine from 100:1 to an 18:1 ratio.

2010

The Patient Protection & Affordable Care Act (ACA)
Healthcare legislation enacted in 2010, declared substance use disorders 1 of the 10 *elements of essential health benefits* in the U.S., requiring that Medicaid & all insurance plans sold on the *Health Insurance Exchange* provide services for addiction treatment equal to other medical procedures (closing insurance exemption gaps of the 2008 MHPAEA). Commonly referred to as the Affordable Care Act or "Obamacare".

2016

Comprehensive Addiction & Recovery Act (CARA)
Passed in 2016, CARA increased access to overdose treatment, naloxone (overdose reversal medication), & medication assisted treatments (MAT), reauthorized an opioid treatment program for pregnant & postpartum women, & allocated money for creation of opioid epidemic response plans on the state level.

2017

Laws passed in the past 50 yrs have moved from more punitive ones to public health oriented ones…. increasing availability, accessibility and affordability of treatment..

The “war on drugs” was part of a national concerted effort to reduce “supply” but also “demand” that created treatment and public health oriented federal agencies..

NIAAA
National Institute on Alcohol Abuse and Alcoholism

NIDA
NATIONAL INSTITUTE ON DRUG ABUSE

SAMHSA
Substance Abuse and Mental Health Services Administration

CSAT
Center for Substance Abuse Treatment
SAMHSA

We have learned a lot in the past 50 years as a result of these concerted national efforts…

We are moving away from…

- A "moral issue" → a genetically influenced disease of the brain
- A few treatment options → many evidence-based pharmacological and psychosocial treatment options
- A rapid detox and "30 day rehab" → ongoing recovery management
- Believing few people recover to → understanding that most people recover, but it can take time
- Uncoordinated and segregated addiction care → health systems treating this as a top public health problem (e.g., MGH)

Paradigm Shifts

MULTIPLE PATHWAYS TO RECOVERY

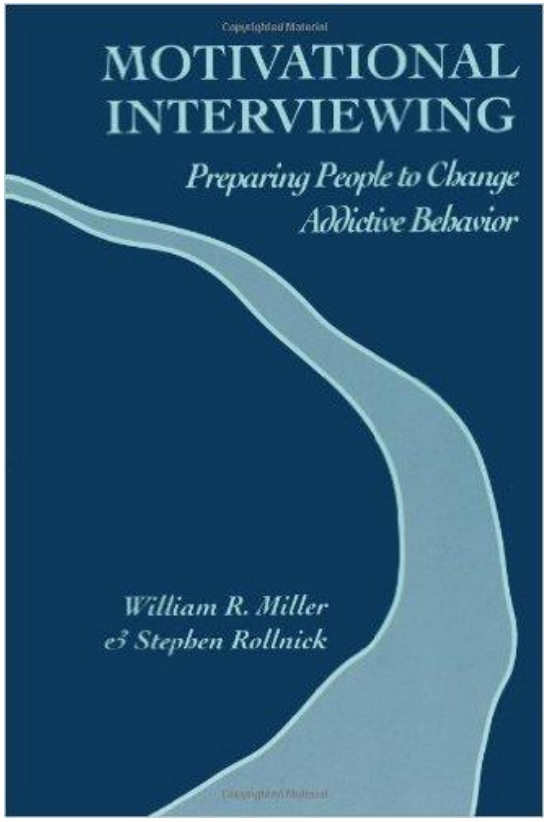
- Acknowledges myriad ways in which individuals can recover:

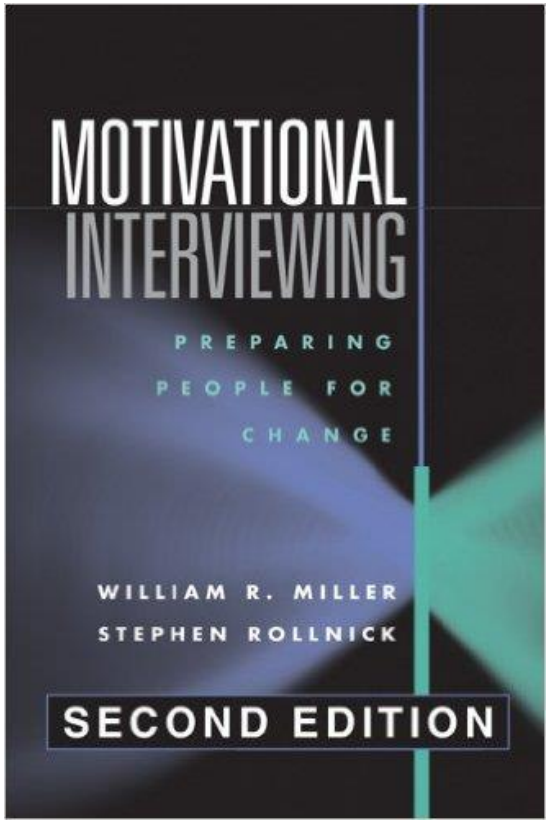
- Clinical pathways (provided by a clinician or other medical professional – both medication and psychosocial interventions)

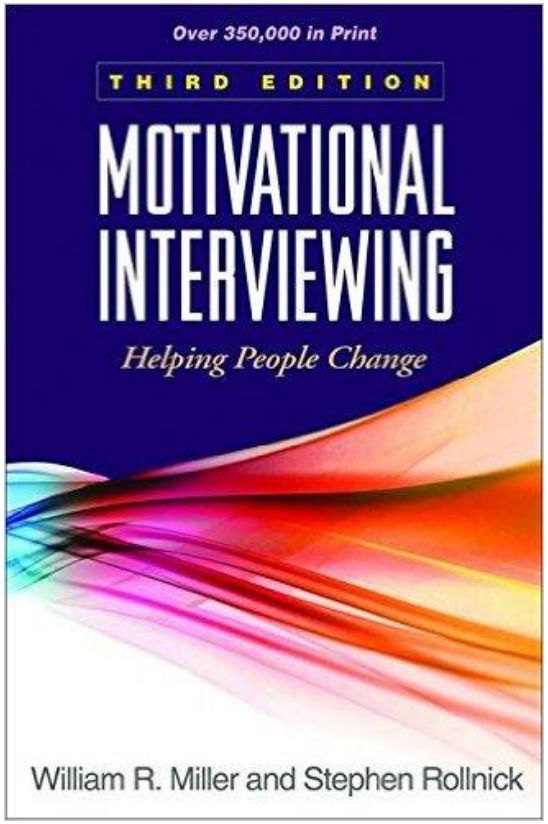
- Non-clinical pathways (services not involving clinicians like AA)

- Self-management pathways (recovery change processes that involve no formal services, sometimes referred to as “natural recovery”).

"Quitting smoking is easy, I've done it dozens of times" –Mark Twain

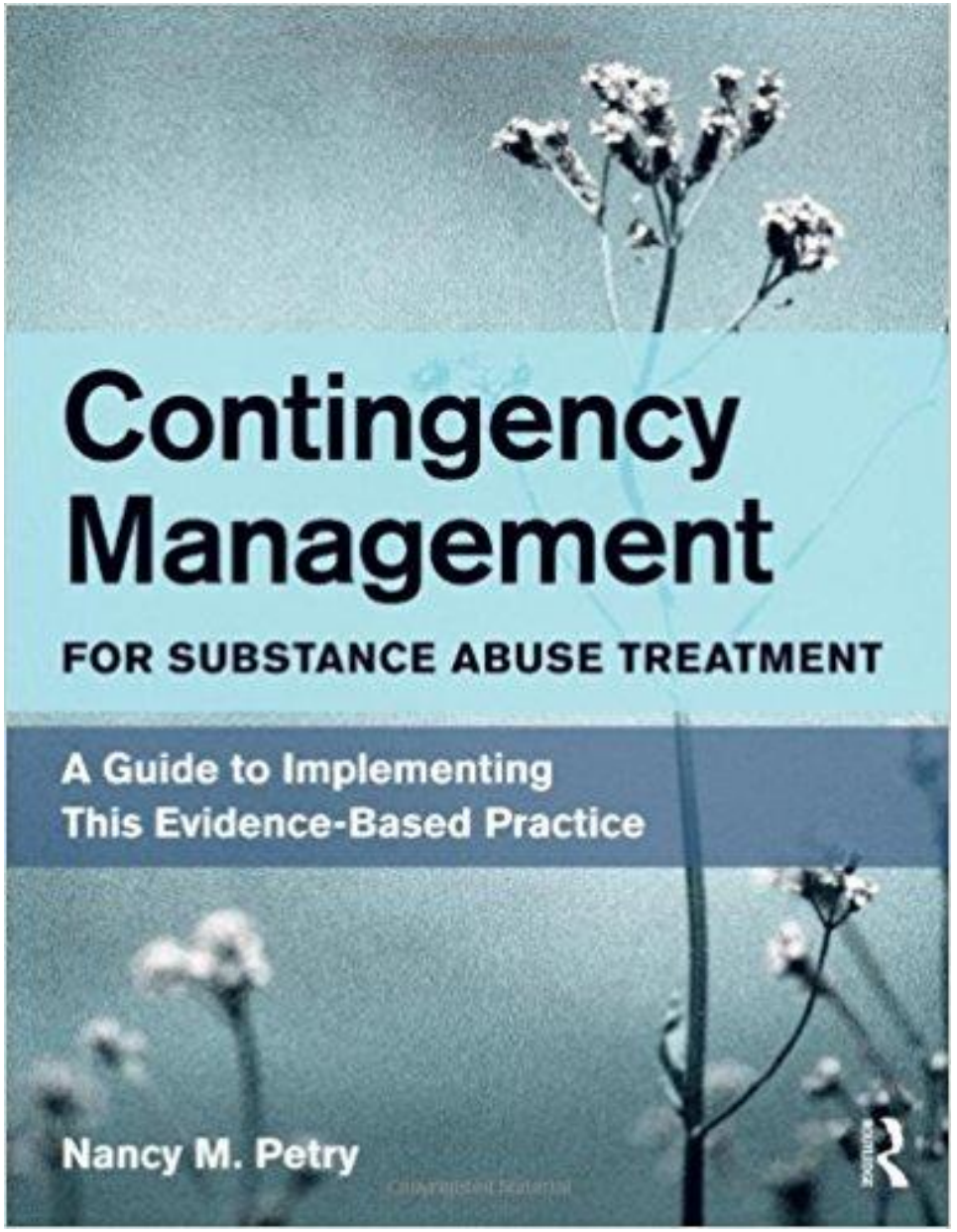


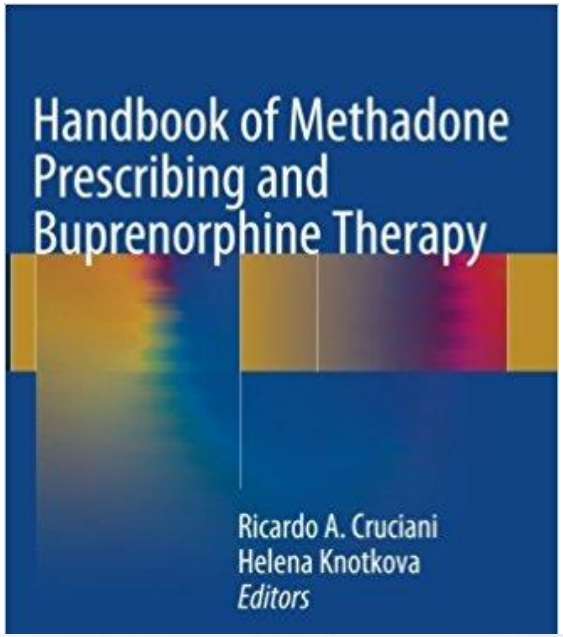




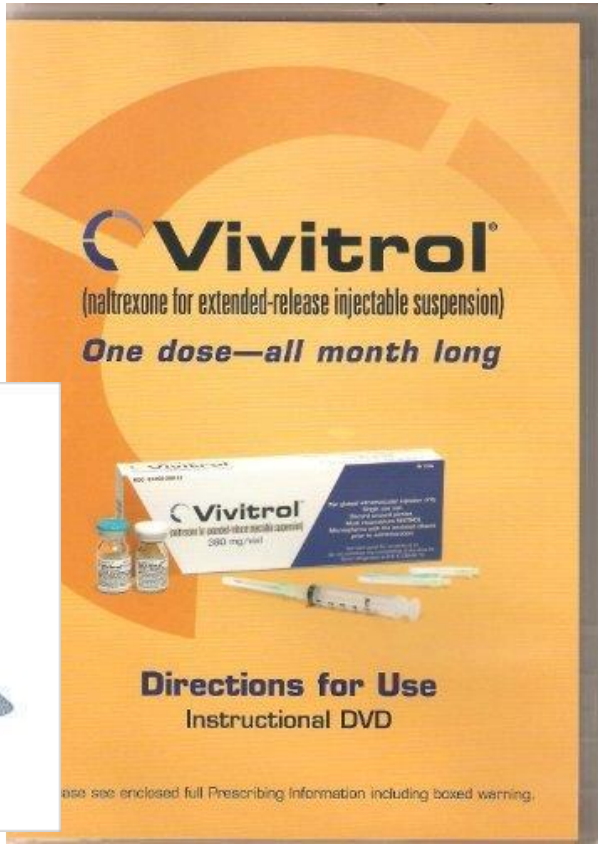
What people really need is a good listening to…

Swift, certain, modest, consequences shape behavioral choices…




Handbook of Methadone Prescribing and Buprenorphine Therapy
Ricardo A. Cruciani
Helena Knotkova
Editors

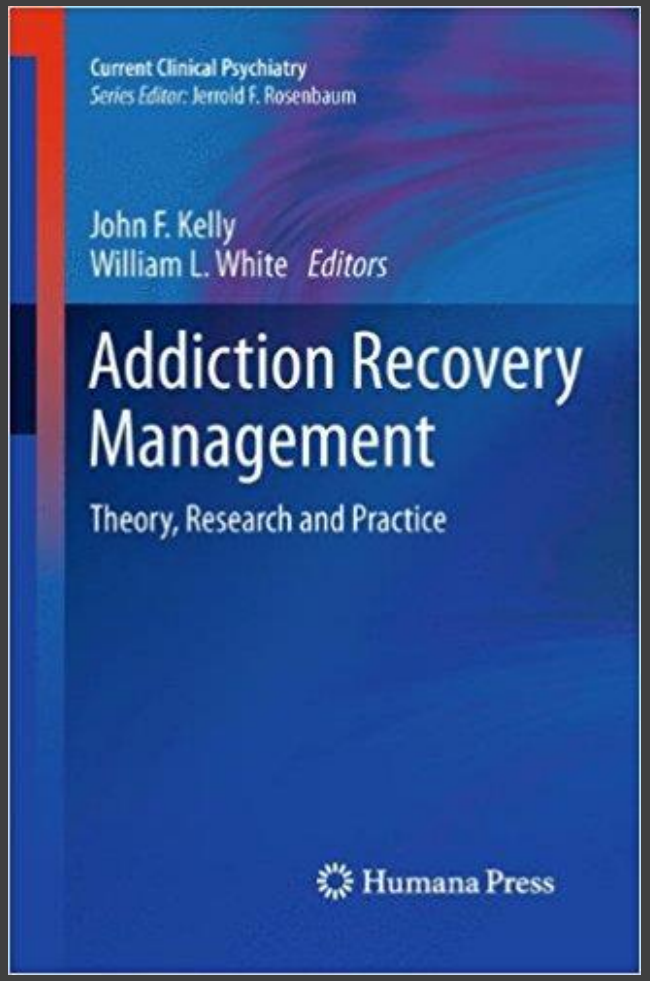

50 mg
REVIA
(naltrexone hydrochloride) Tablets
For Oral Use


Vivitrol
(naltrexone for extended-release injectable suspension)
One dose—all month long
Directions for Use
Instructional DVD
see enclosed full Prescribing Information including boxed warning.

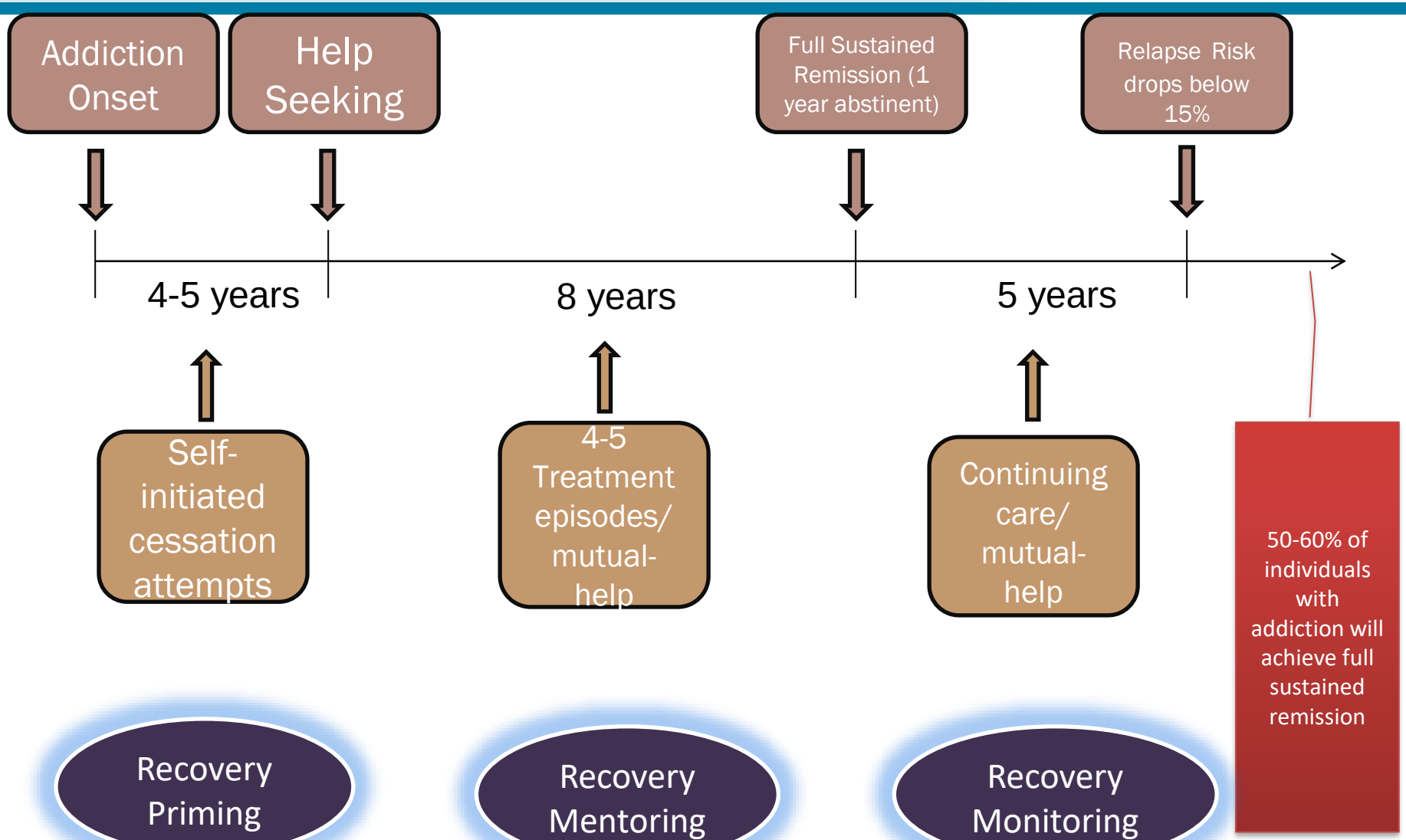

Disulfiram Tablets I.P.
SUFITAL
SUFITAL

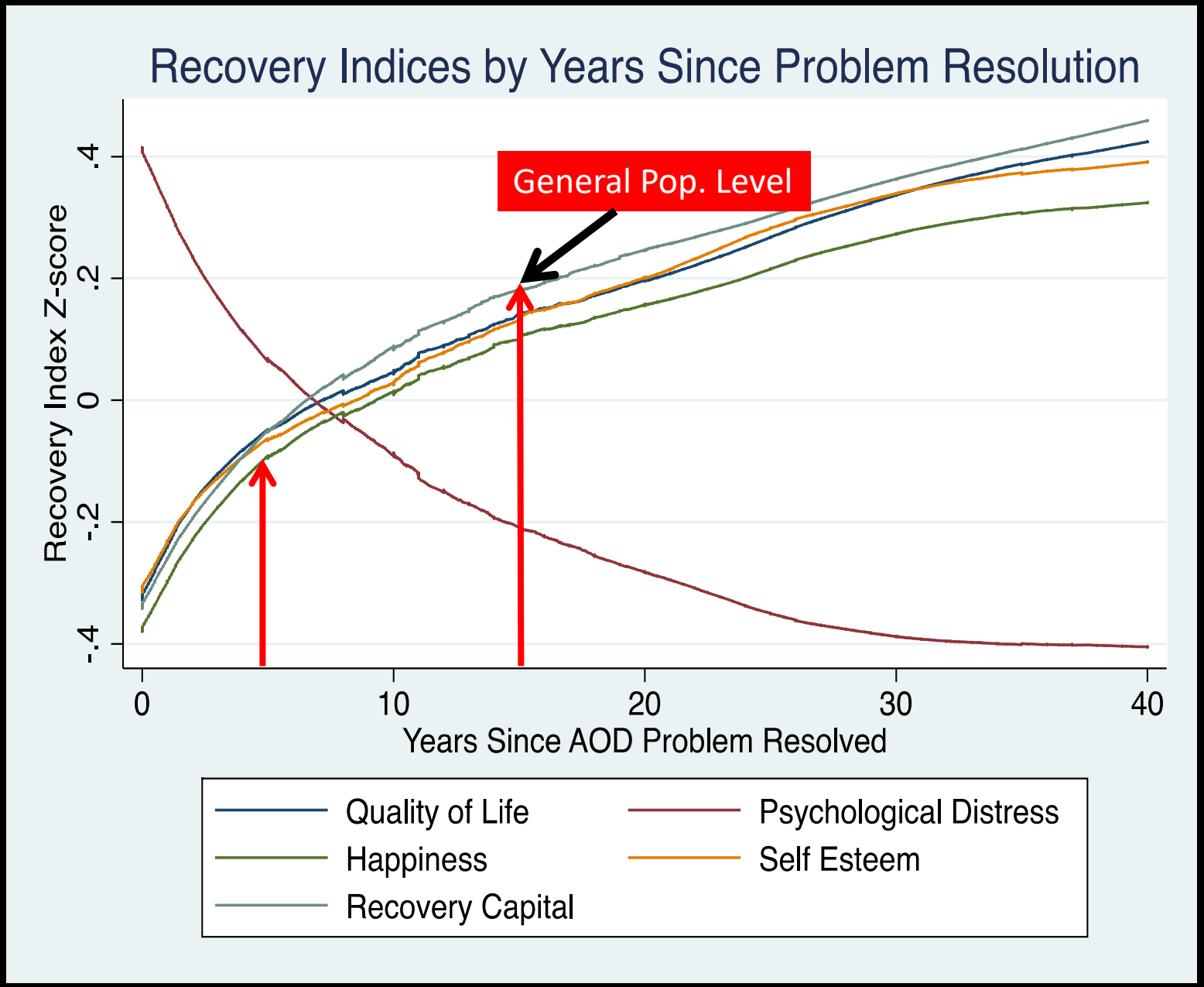

NDC 12496-1208-1
1 sublingual film
8 mg/2 mg
Suboxone®
(buprenorphine and naloxone) sublingual film
8 mg/2 mg
Rx only
Children who accidentally take SUBOXONE will need emergency medical care. Keep SUBOXONE out of the reach of children.
Do not cut, chew or swallow sublingual film.
suboxone.com


glenmark
NDC 68462-435-18
ACAMPROSATE CALCIUM
DELAYED-RELEASE
TABLETS
333 mg
Rx Only
180 Tablets


Current Clinical Psychiatry
Series Editor: Jerrold F. Rosenbaum
John F. Kelly
William L. White Editors
Addiction Recovery Management
Theory, Research and Practice
Humana Press

The clinical course of addiction and achievement of stable recovery can take a long time …



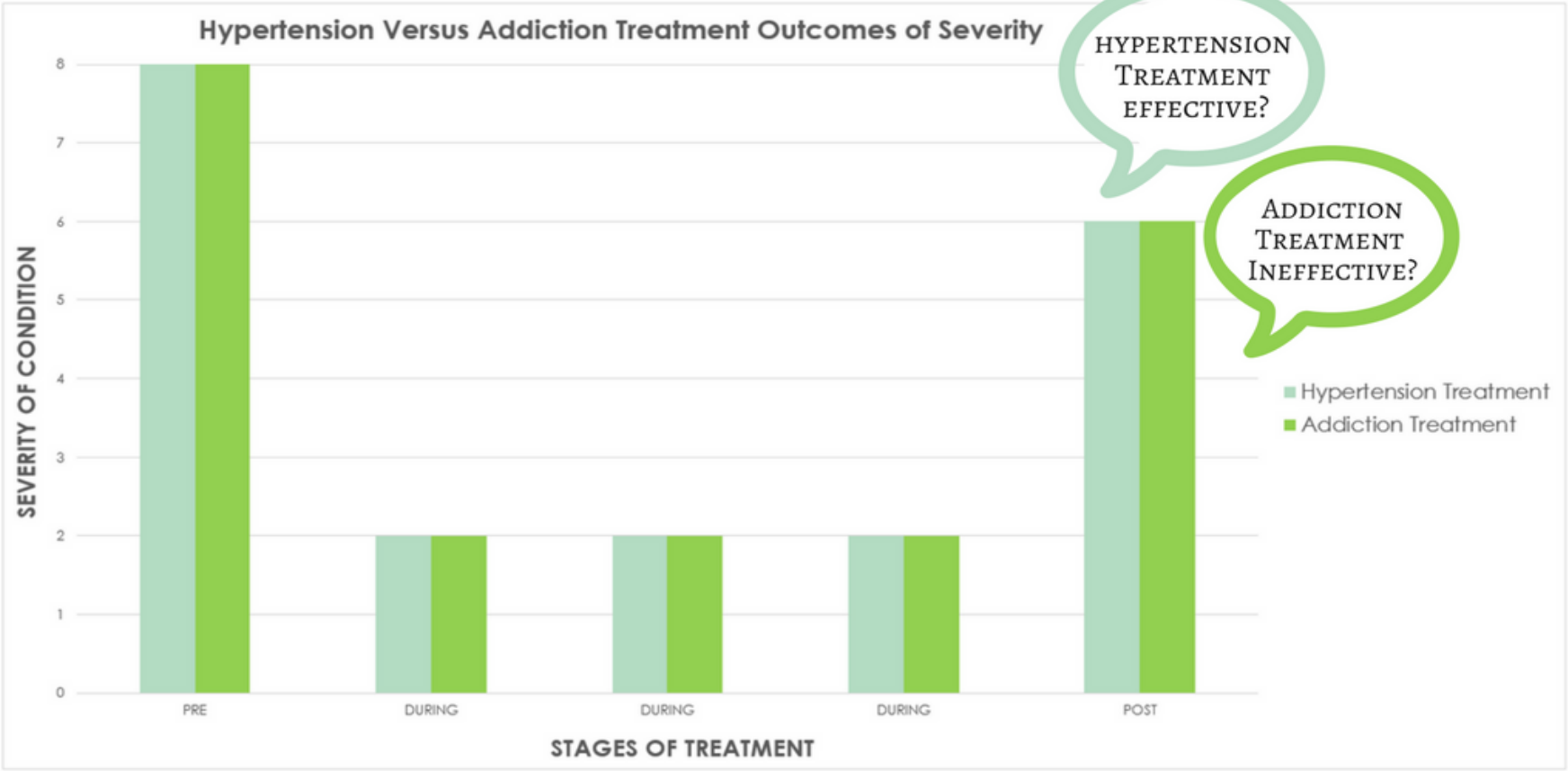


Kelly et al, 2018, *Alcoholism: Clinical and Experimental Research*

Traditional addiction treatment approach: Burning building analogy

- **Putting out the fire** -good job
- **Preventing it from re-igniting** (RP) - less emphasis
- **Architectural planning** (recovery plan) –neglected
- **Re-building materials (recovery capital) –**neglected
- **Granting "rebuilding permits"** - (removing barriers)

Why are treatments of addiction & hypertension evaluated differently?

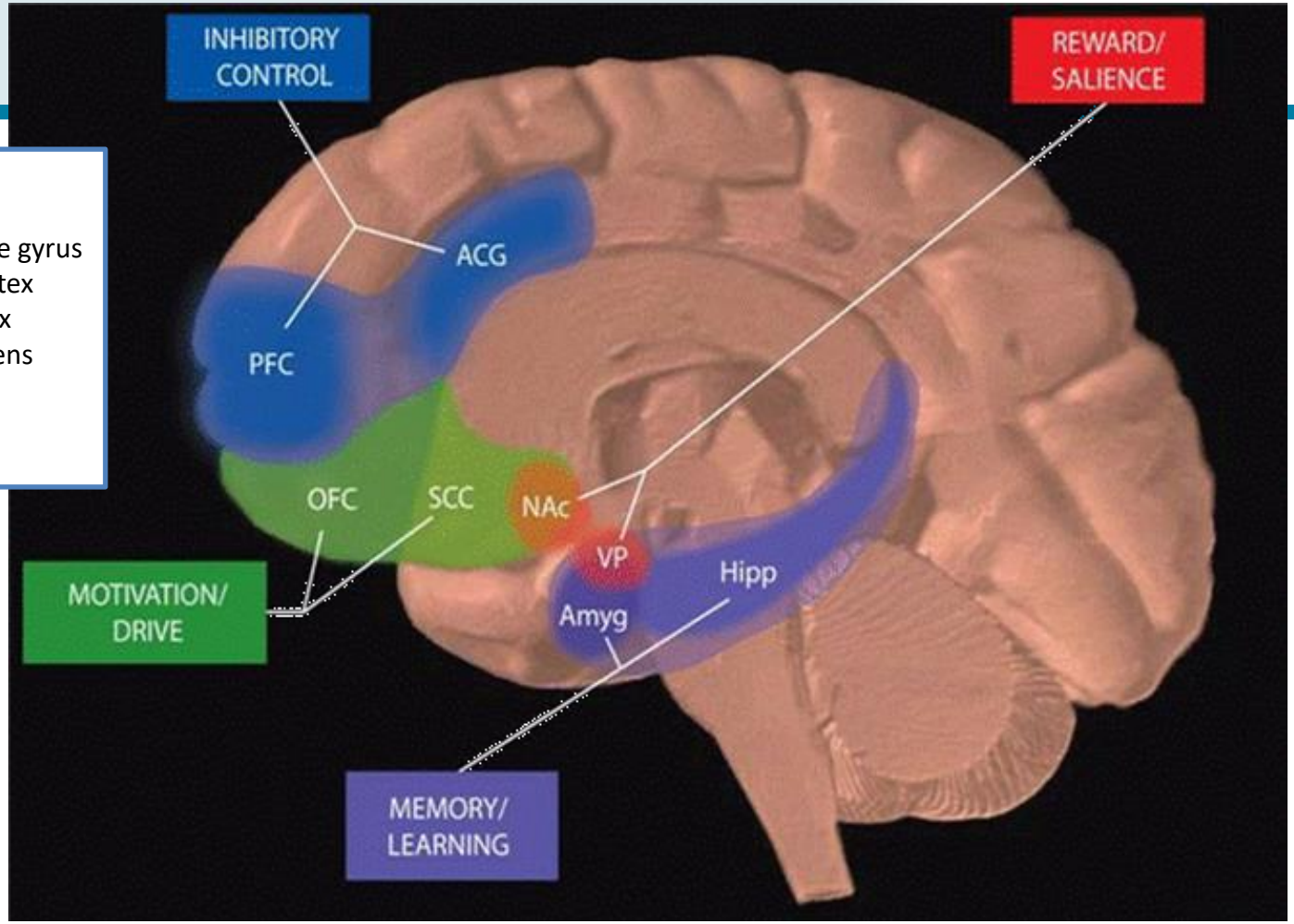


The successful treatment of hypertension is seen as an ongoing process.

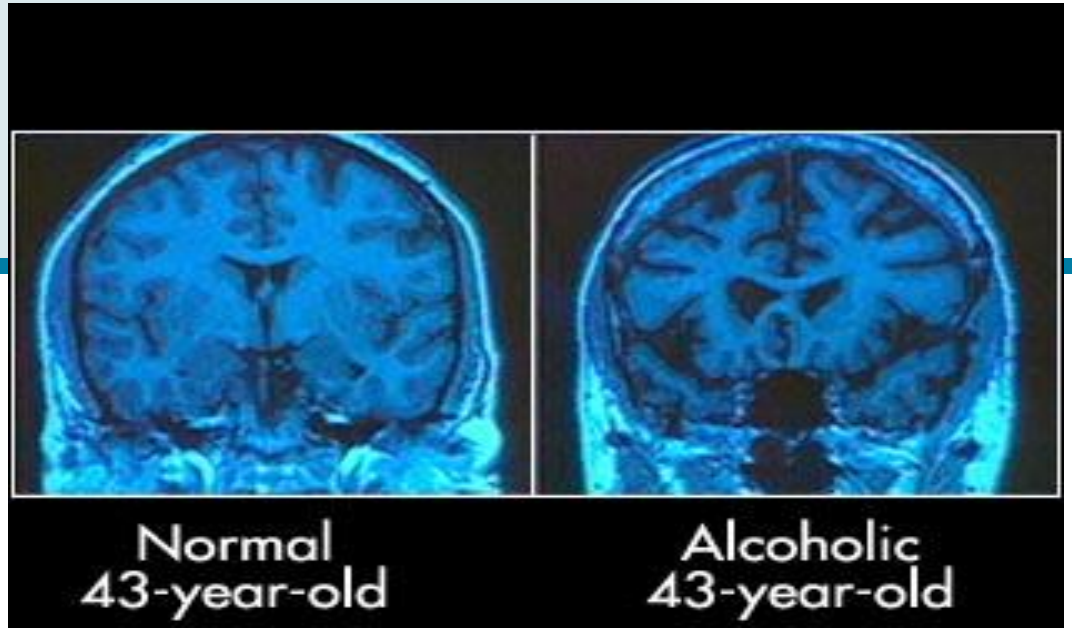
The successful treatment of addiction is seen as something that begins after treatment stops.

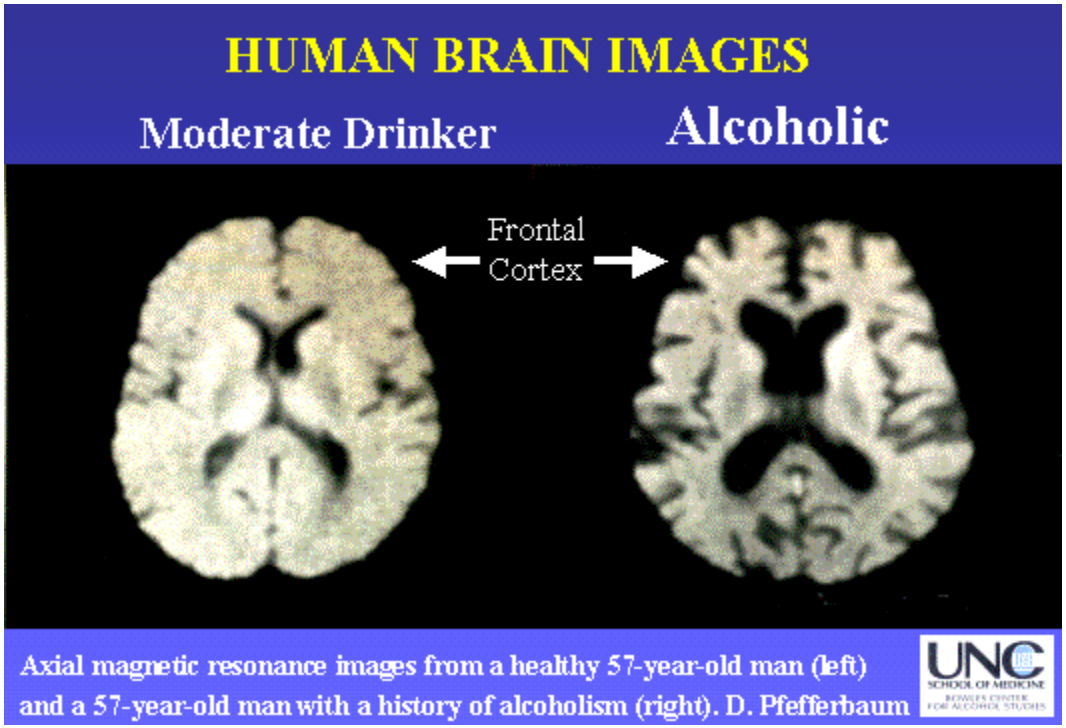
Circuits Involved in Drug Use and Addiction

Key:
PFC: prefrontal cortex
ACG: anterior cingulate gyrus
OFC: orbitofrontal cortex
SCC: subcallosal cortex
NAc: nucleus accumbens
VP: ventral pallidum
Hipp: hippocampus
Amyg: amygdala



All of these brain regions must be considered in developing strategies to effectively treat addiction.


Normal
43-year-old
Alcoholic
43-year-old


HUMAN BRAIN IMAGES
Moderate Drinker
Alcoholic
Frontal
Cortex
Axial magnetic resonance images from a healthy 57-year-old man (left) and a 57-year-old man with a history of alcoholism (right). D. Pfefferbaum
UNC
SCHOOL OF MEDICINE

Post-acute withdrawal effects:

- More stress and lowered ability to experience normal pleasures

Increased sensitivity to stress via…

- Increased activity in hypothalamic-pituitary-adrenal axis (HPA-axis) and CRF/Cortisol release

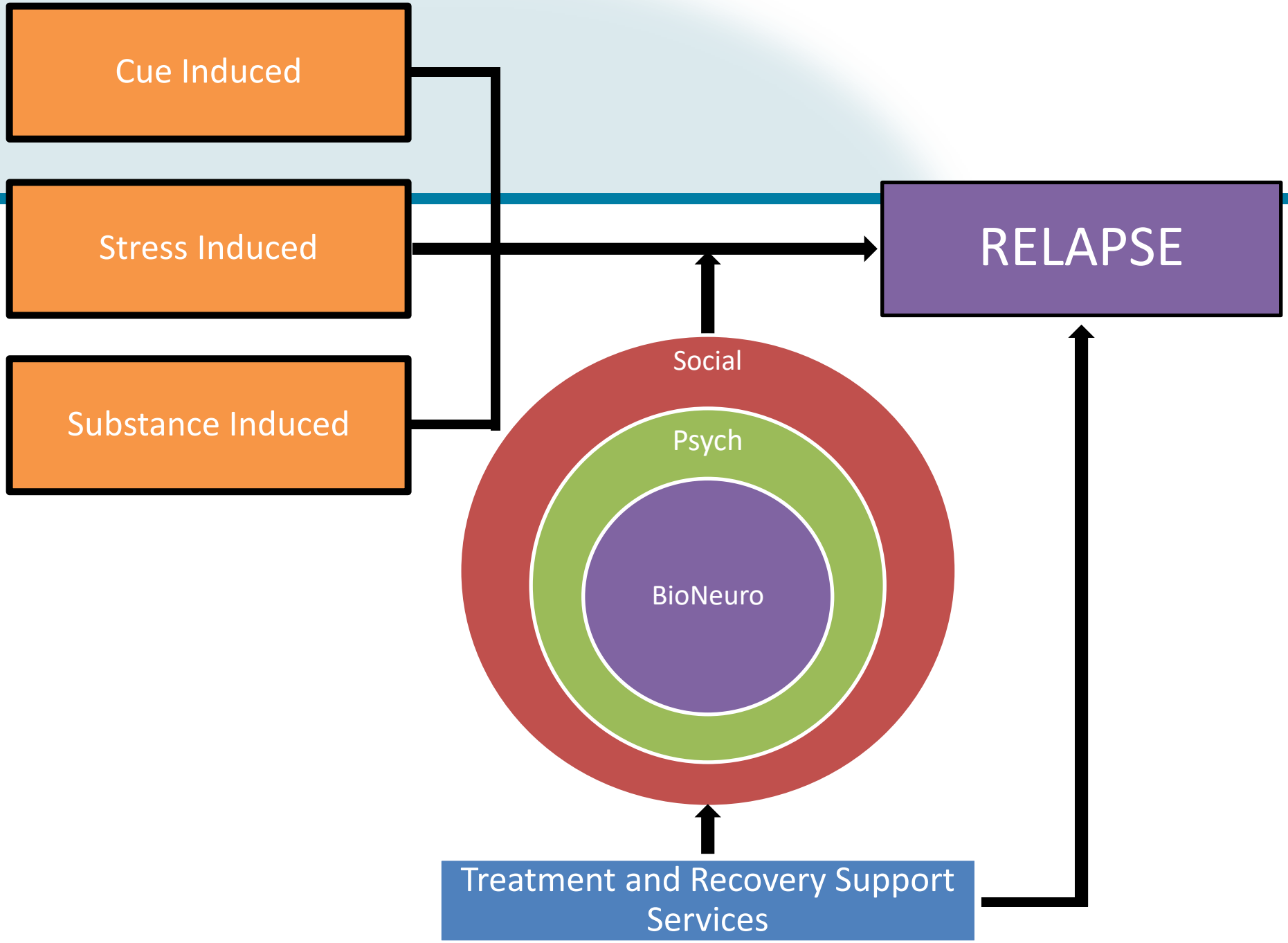
Lowered ability to experience normal levels of reward via…

- Down-regulated dopamine D2 receptor volume increasing risk of protracted dysphoria/anhedonia and relapse risk

Physiological Theories

General Adaptation Syndrome (Selye, 1956)

Alarm---- Resistance---**Exhaustion**



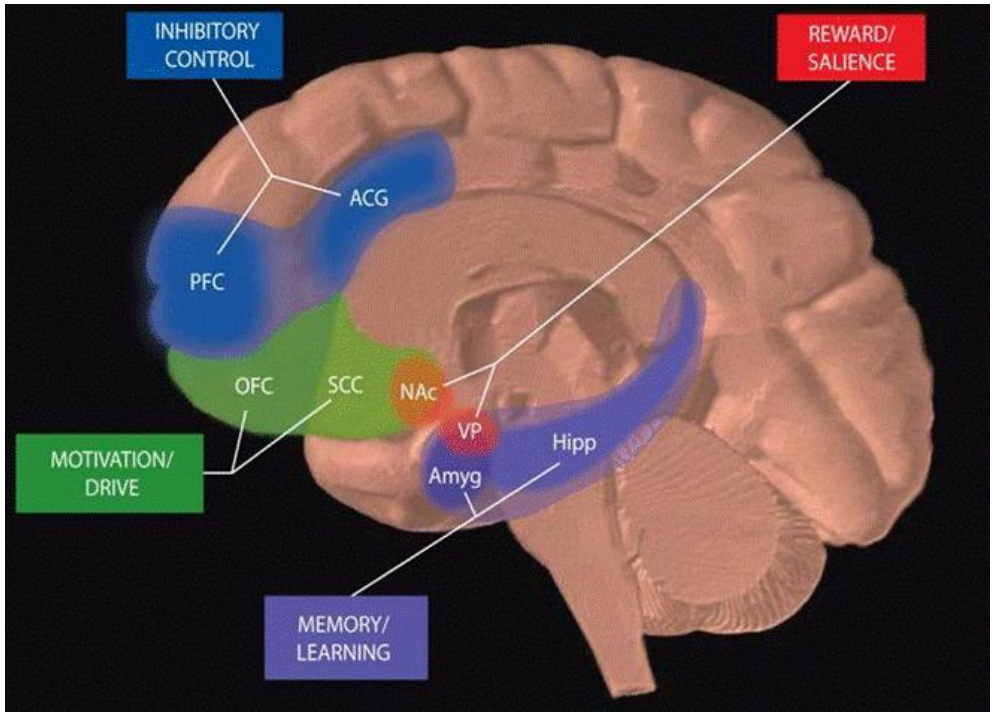
Kelly, JF Yeterian, JD In: McCrady and Epstein *Addictions*: *A comprehensive Guidebook, Oxford University Press (2013)*

Treatment and Recovery Support Services

To help offset long-term relapse risk a number of indigenous community-based treatment and recovery support services have emerged and grown; these help build "recovery capital" to sustain remission

Neuroscience of Recovery Capital

- If addiction is a disease of the brain could jobs, recovery housing, and friends, change the brain, upregulate down-regulated receptor systems, and increase the chances of long-term remission?



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Social Relationships and Mortality Risk: A Meta-analytic Review

Julianne Holt-Lunstad[1]*, Timothy B. Smith[2], J. Bradley Layton[3]

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Abstract

Background: The quality and quantity of individuals' social relationships has been linked not only to mental health but also to both morbidity and mortality.

Objectives: This meta-analytic review was conducted to determine the extent to which social relationships influence risk for mortality, which aspects of social relationships are most highly predictive, and which factors may moderate the risk.

Data Extraction: Data were extracted on several participant characteristics, including cause of mortality, initial health status, and pre-existing health conditions, as well as on study characteristics, including length of follow-up and type of assessment of social relationships.

Results: Across 148 studies (308,849 participants), the random effects weighted average effect size was OR = 1.50 (95% CI 1.42 to 1.59), indicating a 50% increased likelihood of survival for participants with stronger social relationships. This finding remained consistent across age, sex, initial health status, cause of death, and follow-up period. Significant differences were found across the type of social measurement evaluated ($p<0.001$); the association was strongest for complex measures of social integration (OR = 1.91; 95% CI 1.63 to 2.23) and lowest for binary indicators of residential status (living alone versus with others) (OR = 1.19; 95% CI 0.99 to 1.44).

Conclusions: The influence of social relationships on risk for mortality is comparable with well-established risk factors for mortality.

Please see later in the article for the Editors' Summary.

Social Buffering

- Stress-buffering effects of social relationships- one of the major findings of past century
- Mechanisms of this poorly understood

Psychological Bulletin

0033-2909/13/$12.00 DOI: 10.1037/a0032671

Psychobiological Mechanisms Underlying the Social Buffering of the Hypothalamic–Pituitary–Adrenocortical Axis: A Review of Animal Models and Human Studies Across Development

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University of Minnesota

Regina M. Sullivan
New York University Langone Medical Center

Megan R. Gunnar
University of Minnesota

Discovering the stress-buffering effects of social relationships has been one of the major findings in psychobiology in the last century. However, an understanding of the underlying neurobiological and psychological mechanisms of this buffering is only beginning to emerge. An important avenue of this research concerns the neurocircuitry that can regulate the activity of the hypothalamic–pituitary–adrenocortical (HPA) axis. The present review is a translational effort aimed at integrating animal models and human studies of the social regulation of the HPA axis from infancy to adulthood, specifically focusing on the process that has been named *social buffering*. This process has been noted across species and consists of a dampened HPA axis stress response to threat or challenge that occurs with the presence or assistance of a conspecific. We describe aspects of the relevant underlying neurobiology when enough information exists and expose major gaps in our understanding across all domains of the literatures we aimed to integrate. We provide a working conceptual model focused on the role of oxytocinergic systems and prefrontal neural networks as 2 of the putative biological mediators of this process, and propose that the role of early experiences is critical in shaping later social buffering effects. This synthesis points to both general future directions and specific experiments that need to be conducted to build a more comprehensive model of the HPA social buffering effect across the life span that incorporates multiple levels of analysis: neuroendocrine, behavioral, and social.

Keywords: stress, social support, early caregiving, oxytocin, prefrontal cortex

It is an empirical reality that some individuals succumb, whereas others thrive, when confronted with similar stressors. Having access to social support may be an important modulator of these widespread individual differences in responses to potentially stressful events. Indeed, some exciting experiments in humans (e.g., Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003; Kirschbaum, Klauer, Filipp, & Hellhammer, 1995; Taylor et al., 2008) and animals (e.g., Hennessy, 1984, 1986; Vogt, Coe, & Levine, 1981) have identified a dampening of the hypothalamic–pituitary–adrenocortical (HPA) axis response to stressors by social factors as one of the possible mechanisms underlying the benefits of social support. Longitudinal studies also reveal relations between social support and basal levels of stress hormones such as salivary cortisol (Rosal, King, Ma, & Reed, 2004). Understanding the social buffering processes affecting this neuroendocrine axis would allow the possibility of interventions that might have cascading positive effects across multiple biological and psychological systems. Despite the important implications of this knowledge, our understanding of the underlying neurobiology and relevant components of social interaction that permit these HPA activity-regulating effects remains vastly incomplete.

General Framework

RESPONDING TO STRESS: SOCIAL BUFFERING

…and researchers have started to examine possible neurobiological connections between social support and individual stress responses

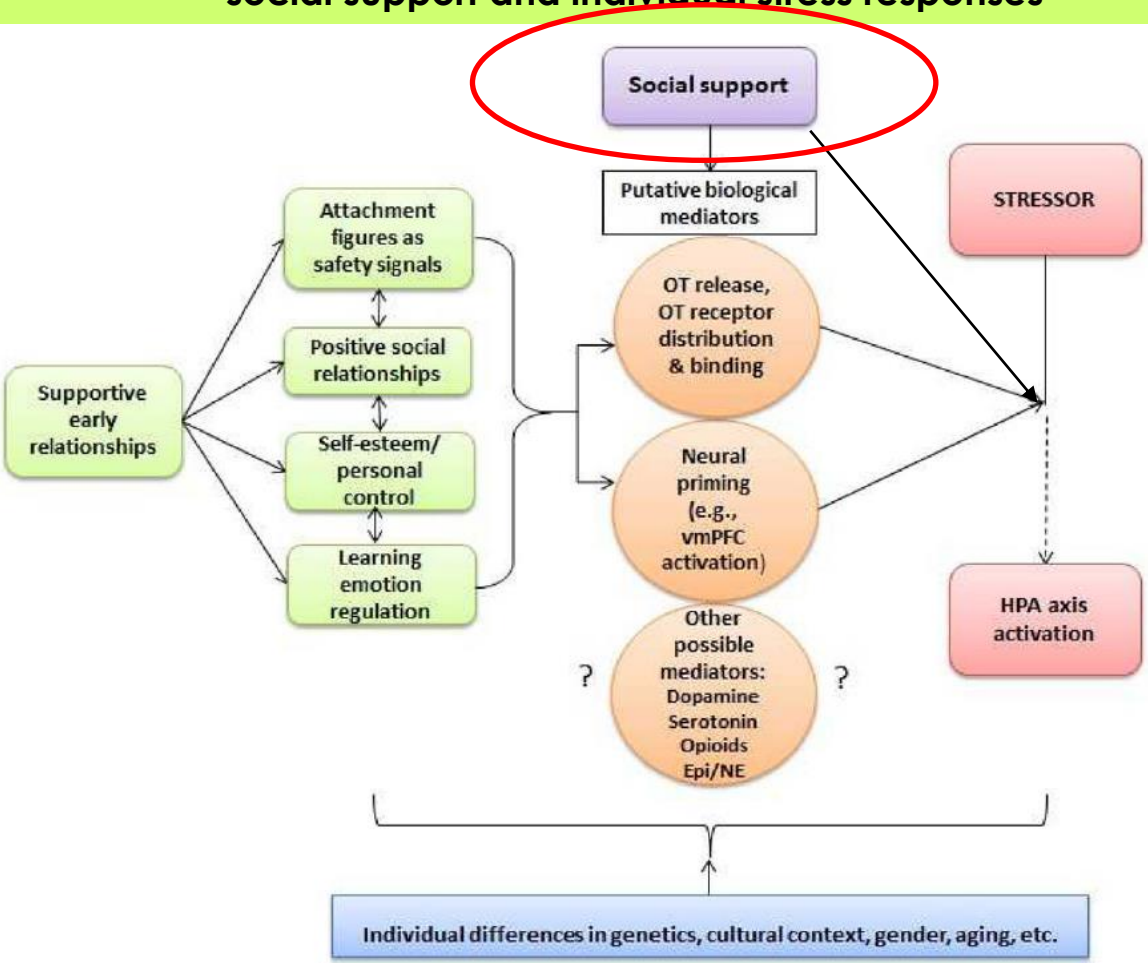


Figure 1. A Developmental Working Model of Social Buffering of the HPA Axis in Humans

OT = oxytocin, vmPFC = ventro-medial prefrontal cortex, Epi = epinephrine, NE = norepinephrine

Hostinar, C. E., Sullivan, R. M., & Gunnar, M. R. (2014). Psychobiological Mechanisms Underlying the Social Buffering of the HPA Axis: A Review of Animal Models and Human Studies across Development. Psychological Bulletin, 140(1).

D2/D3 RECEPTOR BINDING & SOCIAL STATUS AND SUPPORT

AIM

Assess whether $D_{2/3}$ receptor levels correlate with social status and social support (particularly, to determine if low social status and low social support correlate with low $D_{2/3}$ receptor binding)

SAMPLE

N = 14 healthy participants (i.e., non-smoking with no Axis I disorders, significant medical conditions, or use of medications before the scan) who were scanned using positron emission tomography (PET) imaging to measure $D_{2/3}$ receptor binding potential (BP)

MEASURES

- Barratt Simplified Measure of Social Status (BMSSS) to measure social status
- Scale of Perceived Social Support (MSPSS) to measure social support
- [^{11}C]raclopride to measure $D_{2/3}$ receptor binding in the striatum

OUTCOMES

- Positive correlation between **$D_{2/3}$ receptor** binding potential and **social status**
- Positive correlation between **$D_{2/3}$ receptor** binding potential and **perceived social support**
- Results similar to prior studies of nonhuman primates, which show higher $D_{2/3}$ receptor levels in monkeys who are dominant in their social hierarchy, compared to those who are subordinate

BRIEF REPORTS

Dopamine Type 2/3 Receptor Availability in the Striatum and Social Status in Human Volunteers

Diana Martinez, Daria Orlowska, Rajesh Narendran, Mark Slifstein, Fei Liu, Dileep Kumar, Allegra Broft, Ronald Van Heertum, and Herbert D. Kleber

Background: Previous positron emission tomography (PET) imaging studies in nonhuman primates have shown that striatal dopamine type 2/3 ($D_{2/3}$) receptors correlate with social hierarchy in monkeys and that dominant animals exhibit higher levels of $D_{2/3}$ receptor binding. The goal of the present study was to examine this phenomena in human subjects using PET and the radiotracer [^{11}C]raclopride.

Methods: Fourteen healthy volunteers were scanned with [^{11}C]raclopride to measure $D_{2/3}$ receptor binding potential (BP). Social status was assessed using the Barratt Simplified Measure of Social Status. In addition, participants were asked to assess their level of social support using the Multidimensional Scale of Perceived Social Support (MSPSS).

Results: A correlation was seen between social status and dopamine $D_{2/3}$ receptors, where volunteers with the higher status had higher values for [^{11}C]raclopride BP. A similar correlation was seen with the perceived social support, where higher [^{11}C]raclopride BP correlated with higher scores on the MSPSS.

Conclusions: The results of this study support the hypothesis that social status and social support is correlated with $D_{2/3}$ receptor binding.

Key Words: [^{11}C]raclopride, dopamine 2/3 receptor, PET imaging, social status

Previous studies in animals have shown a correlation between dopamine transmission in the brain and social hierarchy (1). In monkeys, dominant and subordinate social rank are determined by physical and social triumph and defeat. Dominant animals win more physical confrontations and receive more social attention, such as grooming or huddling. Two positron emission tomography (PET) imaging studies have investigated the relationship between social status and $D_{2/3}$ receptors in the striatum in monkeys. Both showed that social dominance was associated with higher $D_{2/3}$ receptor binding compared with subordinate animals (2,3).

In humans, social hierarchy is a more subtle phenomenon that can be approximated by measuring social status and social support (4). Thus, the goal of the present study was to examine the correlation between these factors and dopamine $D_{2/3}$ receptor binding in human subjects. Given the known effect of disease states on striatal $D_{2/3}$ receptors, including substance dependence, schizophrenia, and anxiety disorders (5–7), only healthy control volunteers were included in this study. Social status was measured using the Barratt Simplified Measure of Social Status (BMSSS) (8) and social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) (9). Our hypothesis was that low social status and low levels of social support would correlate with low $D_{2/3}$ receptor binding in the striatum measured with [^{11}C]raclopride.

From the Departments of Psychiatry (DM, DO, MS, FL, DK, AB, HDK) and Radiology (RVH), Columbia University, College of Physicians and Surgeons, New York, New York; and Department of Radiology (RN), University of Pittsburgh, Pittsburgh, Pennsylvania.
Address correspondence to Diana Martinez, M.D., New York State Psychiatric Institute, 1051 Riverside Drive, Box #31, New York, NY 10032; E-mail: dm437@columbia.edu.
Received Dec 18, 2008; revised Jul 23, 2009; accepted Jul 28, 2009.

Methods and Materials

The study was approved by the Institutional Review Board of the New York State Psychiatric Institute and all subjects provided written informed consent. Study participants were nonsmoking healthy control subjects and were required to have no DSM-IV Axis I disorder (including substance abuse or dependence), no significant medical conditions, and no use of medications before the scan (6 months for medications that could affect dopamine, 2 weeks for all others). Subjects (nine men and five women) were recruited from the New York City metropolitan area. Participant screening included a psychiatric assessment with the *Structured Clinical Interview for DSM-IV Axis I Disorders* (10), physical examination, electrocardiogram, and laboratory tests. All subjects were asked for data to complete the Barratt Simplified Measure of Social Status and to complete the Multidimensional Scale of Perceived Social Support. The scans performed on female subjects were not controlled for menstrual cycle phase.

[^{11}C]raclopride was prepared as previously described (11), and PET studies were acquired using a bolus injection of the radiotracer. The PET scans were obtained on the ECAT EXACT HR+ (Siemens/CTI, Knoxville, Tennessee) in three-dimensional (3-D) mode. Emission data were obtained as 15 frames of increasing duration up to 60 minutes. The PET images were reconstructed by filtered backprojection (Shepp .5 filter) with attenuation correction using the data from a 10-minute transmission scan.

All image analysis was performed in MEDx (Sensor Systems, Inc, Sterling, Virginia). Each subject underwent a transaxial T1 magnetic resonance imaging (MRI) scan, acquired on the GE Signa EXCITE 3 T/94 cm scanner (GE Medical Systems, Milwaukee, Wisconsin), for delineation of the regions of interest (ROIs). The regions of interest outlined on the MRI included the subdivisions of the striatum, which have been previously described (12). Briefly, these included the ventral striatum (VST), the dorsal caudate rostral to the anterior commissure (AC) (precommissural dorsal caudate [preDCA]), the dorsal putamen rostral to the AC (precommissural dorsal putamen [preDPU]), the caudate caudal to the AC (postcommissural caudate [postCAU]), and the putamen caudal to the AC (postcommissural putamen [postPUT]).

Martinez, D., Orlowska, D., Narendran, R., Slifstein, M., Liu, F., Kumar, D., . . . Kleber, H. D. (2010). Dopamine type 2/3 receptor availability in the striatum and social status in human volunteers. *Biological Psychiatry, 67*(3), 275-278. doi:10.1016/j.biopsych.2009.07.037

D2/D3 RECEPTOR BINDING & SOCIAL STATUS AND SUPPORT

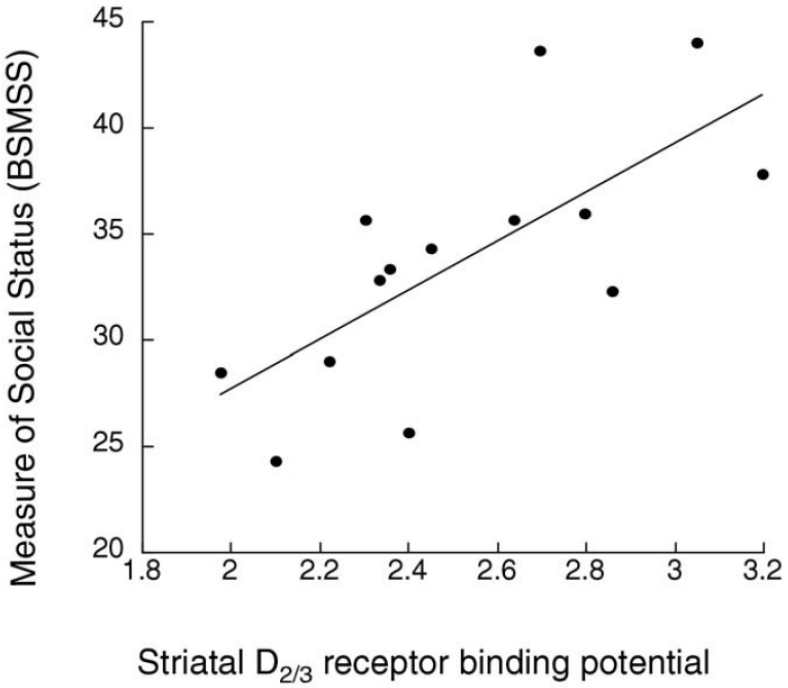


Figure 1. Correlation between [^{11}C]raclopride BP (x axis) and social status, measured with the Barratt Simplified Measure of Social Status (BSMSS). A positive correlation was seen, where higher BP correlated with higher BSMSS ($r = .71$, $p = .004$, age-corrected $p = .007$). BP, binding potential.

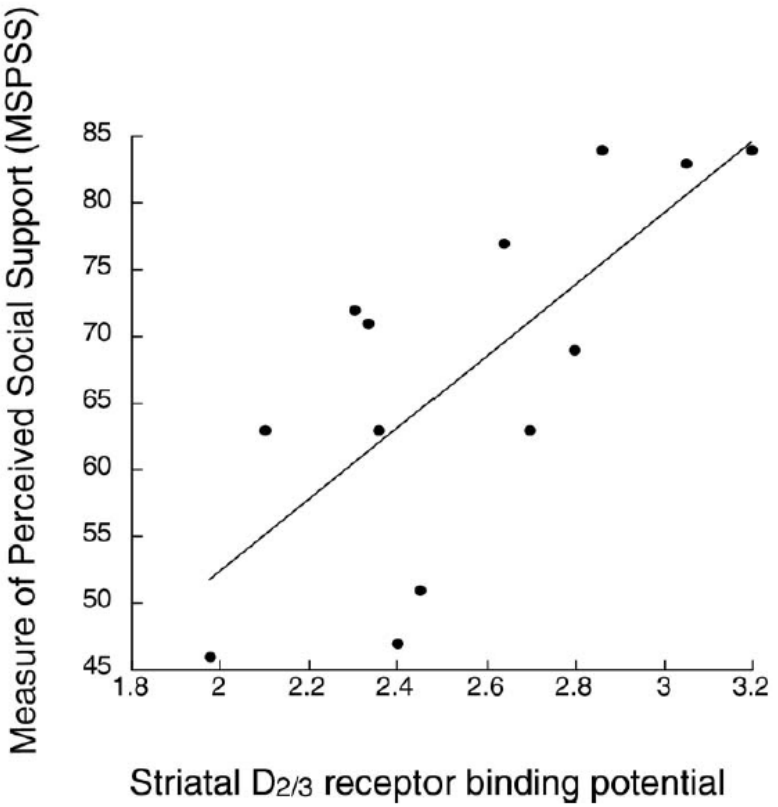


Figure 2. Correlation between [^{11}C]raclopride BP (x axis) and score on the Multidimensional Scale of Perceived Social Support (MSPSS). A positive correlation was seen, where higher BP correlated with higher score on the MSPSS ($r = .73$, $p = .005$, age-corrected $p = .02$). BP, binding potential.

$D_{2/3}$ receptor binding increases as **social status** increases.

$D_{2/3}$ receptor binding increases as **social support** increases.

Martinez, D., Orlowska, D., Narendran, R., Slifstein, M., Liu, F., Kumar, D., . . . Kleber, H. D. (2010). Dopamine type 2/3 receptor availability in the striatum and social status in human volunteers. *Biological Psychiatry, 67*(3), 275-278. doi:10.1016/j.biopsych.2009.07.037

Social dominance in monkeys: dopamine D_2 receptors and cocaine self-administration

Drake Morgan[1], Kathleen A. Grant[1], H. Donald Gage[2], Robert H. Mach[1,2], Jay R. Kaplan[3], Osric Prioleau[1], Susan H. Nader[1], Nancy Buchheimer[2], Richard L. Ehrenkaufer[2] and Michael A. Nader[1,2]

[1] *Department of Physiology and Pharmacology,* [2]*Department of Radiology,* [3]*Departments of Pathology (Comparative Medicine) and Anthropology, Wake Forest Unive*

Correspondence sho

Monkeys, like humans, love to be with each Other, and also like cocaine…

Published onlin

Disruption of the dopaminergic system has been implicated in the etiology of many pathological conditions, including drug addiction. Here we used positron emission tomography (PET) imaging to study brain dopaminergic function in individually housed and in socially housed cynomolgus macaques ($n = 20$). Whereas the monkeys did not differ during individual housing, social housing increased the amount or availability of dopamine D_2 receptors in dominant monkeys and produced no change in subordinate monkeys. These neurobiological changes had an important behavioral influence as demonstrated by the finding that cocaine functioned as a reinforcer in subordinate but not dominant monkeys. These data demonstrate that alterations in an organism's environment can produce profound biological changes that have important behavioral associations, including vulnerability to cocaine addiction.

The importance of social context, control over environment, and relapse risk

- When all monkeys were individually housed no difference in DA D2 receptor volume
- After 3 months of social housing, dominant monkeys showed 22% increase in DA D2 volume; subordinate monkeys - no change
- Increase in DA D2 associated with lower likelihood of cocaine use
- "Dominance" defined as: easy access to food and water, social mobility, and greater environmental control.
- Human Implications: facilitating greater access to and availability of recovery capital may instill hope, empower people, help them have more control over environment, increase social contact/social mobility, and thereby induce neurochemical changes reducing relapse risk

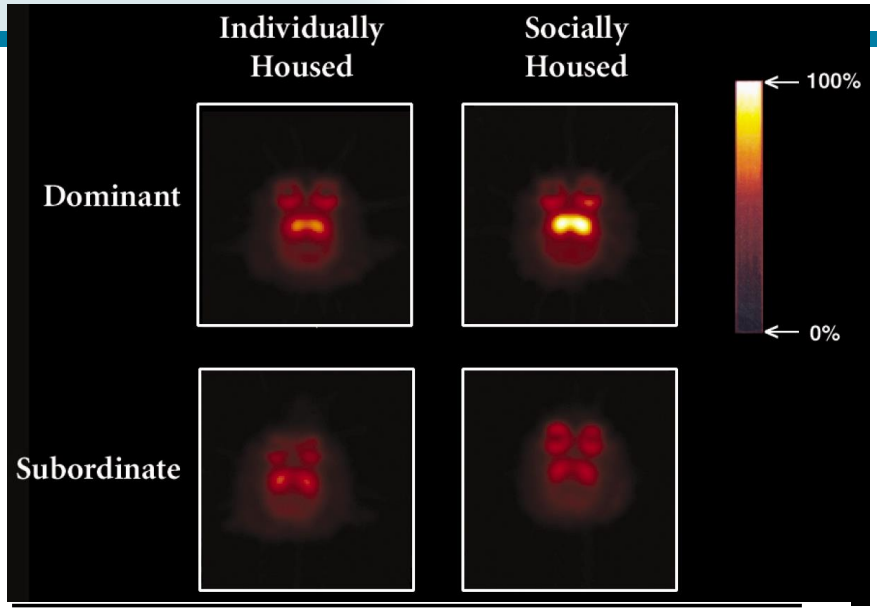


Table 1. Dopaminergic characteristics of monkeys.

Social rank[a]	[18F]FCP distribution volume ratios		
	Individually housed	Socially housed	Percent change
1	2.49 ± 0.08	3.04 ± 0.23[b,c]	+22.0 ± 8.8
2	2.58 ± 0.13	2.99 ± 0.13	+16.7 ± 6.0
3	2.58 ± 0.13	2.88 ± 0.30	+13.4 ± 15.3
4	2.40 ± 0.06	2.49 ± 0.10	+3.9 ± 5.3

Mean ± s.e.m. [18F]FCP DVR as determined with PET imaging in male cynomolgus monkeys as a function of social rank while individually and socially housed. [a]For individually housed scans, these numbers represent eventual social rank. [b]Significantly higher than individually housed 'dominants.' [c]Significantly higher than socially housed subordinates.

Clinically, we are trained to address the psychiatric and medical pathology; RSSs address recovery capital….

Example:

Clinical Pathology: Two 30 yr old men enter treatment with **clinically identical** levels of severity of opioid and alcohol addiction and psychiatric and medical problems and report the same level of distress and impairment

Treatment Plan: Patients are matched based on these clinical profiles to receive the **same** array of interventions to address clinical needs

Clinically, we are trained to address the psychiatric and medical pathology; RSSs address recovery capital….

But….

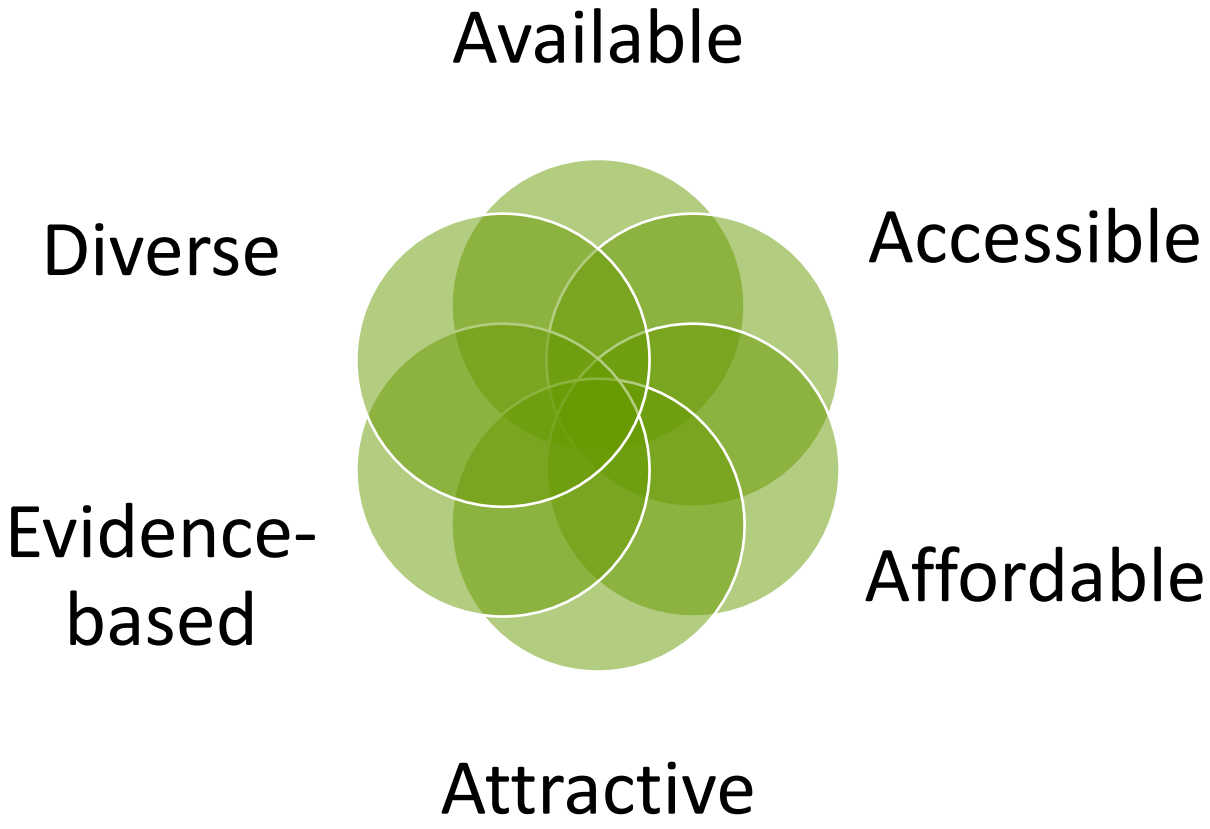
One man is single, he's from a neighborhood that has a high crime rate/drug and alcohol-related arrests; he didn't graduate High School, has a father with active AUD with whom he lives, and is unemployed with a criminal record.

The other is from a low crime neighborhood, is married with two children, a supportive family, has a master degree and is employed as an engineer with a good job and income. His father has 17yrs of sobriety in AA.

Which is more likely to achieve and sustain remission?

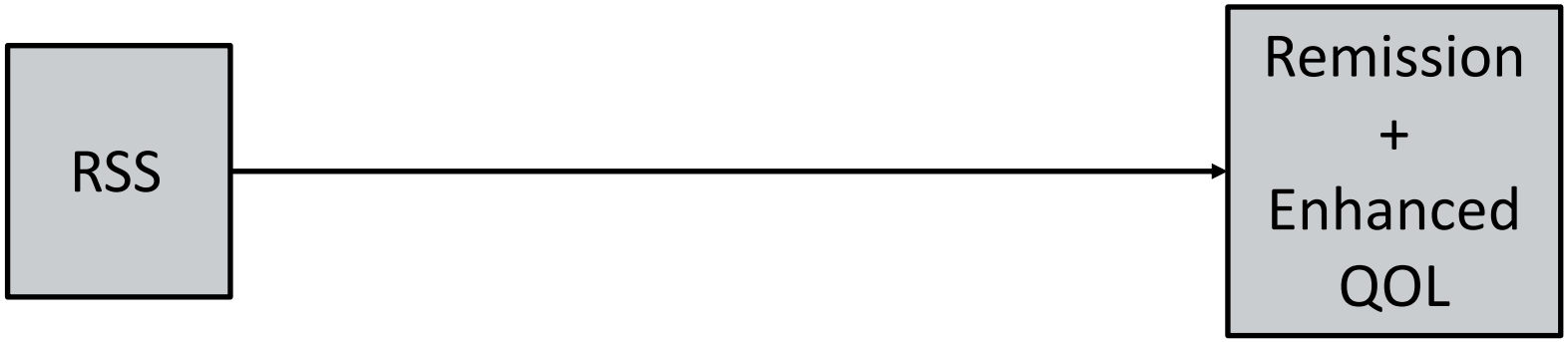
Move from a "Treatment Plan" to "Recovery Plan" based on pathology AND available recovery capital

Treatment and Recovery Support Services ideally should be…

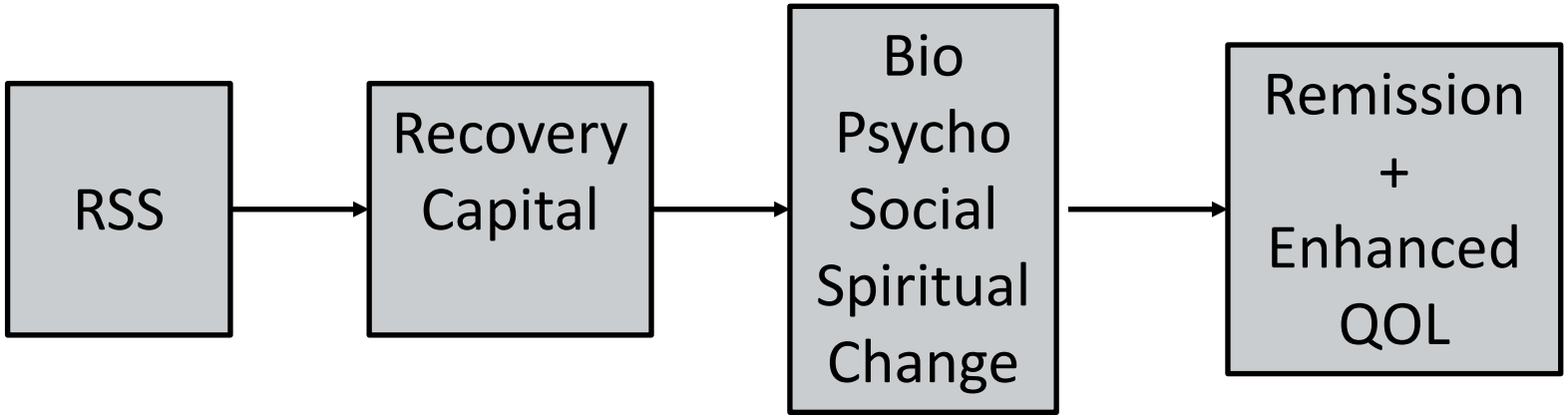


Cadre of Emerging and Growing Long-term Recovery Support Services Now Exist…

RSS Goal

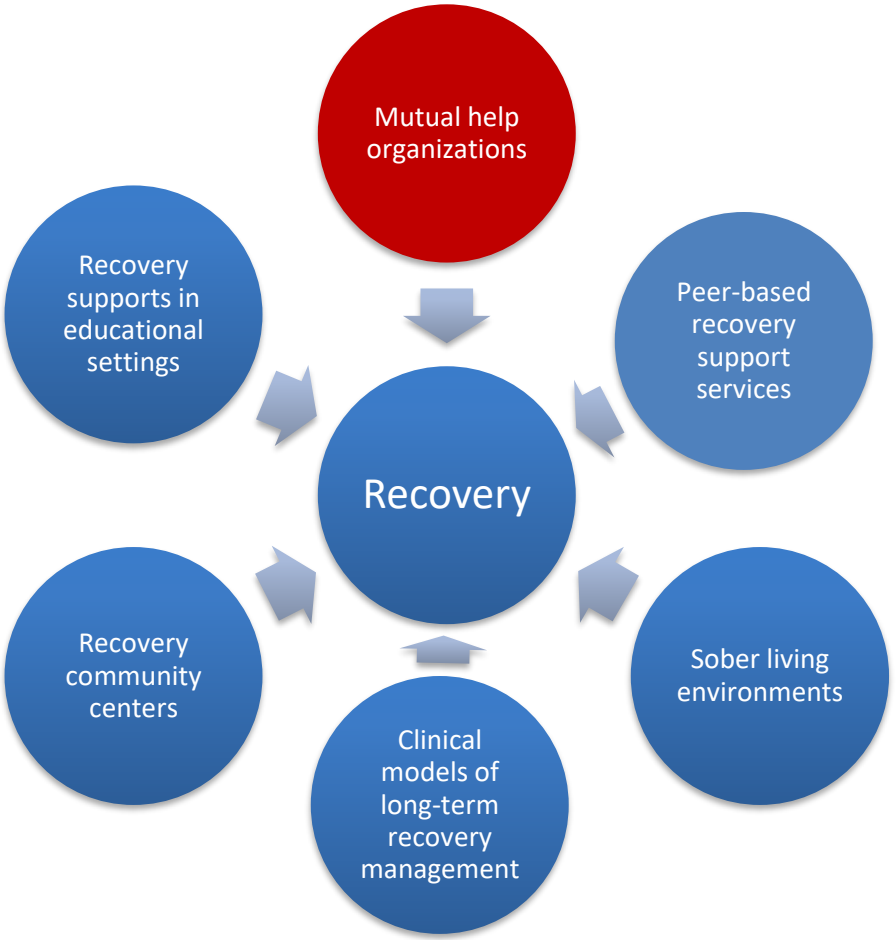


RSS Mechanisms



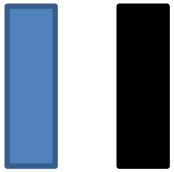
Cadre of Emerging and Growing Long-term Recovery Support Services Now Exist…

Mutual help Organizations



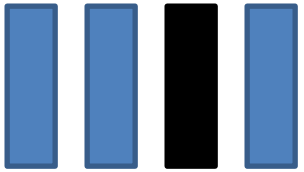
TSF Delivery Modes

Stand alone
Independent therapy

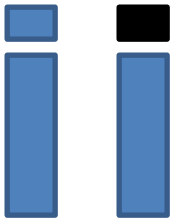


Integrated into an existing therapy

Component of a treatment package (e.g., an additional group)



As Modular appendage linkage component



In past 25 years, MHO research has gone from contemporaneous correlational research to rigorous RCTs

Cochrane Library

Cochrane Database of Systematic Reviews

Alcoholics Anonymous and other 12-step programs for alcohol use disorder (Protocol)

Kelly JF, Humphreys K, Ferri M

Kelly JF, Humphreys K, Ferri M.
Alcoholics Anonymous and other 12-step programs for alcohol use disorder.
Cochrane Database of Systematic Reviews 2017, Issue 11. Art. No.: CD012880.
DOI: 10.1002/14651858.CD012880.

www.cochranelibrary.com

STUDY	Abstinence			Drinking Intensity		Alcohol-related Consequences	Alcohol Use Severity
	Proportion Completely Abstinent	Percent Days Abstinent	Longest Period of Abstinence	Drinks Per Drinking Day	Percentage of Days Heavy Drinking	Alcohol-related Consequences	Alcohol Use Severity
RCTs: All Study Treatment Conditions Manualized, TSF V. Other Clinical Interventions							
Brown 2002							
Davis 2002							
Kelly 2017							
Litt 2007							
Litt 2009							
Litt 2016							
Lydecker 2010							
MATCH 1997a[1 2]							
MATCH 1998a[1]							
MATCH 1998b[1]							
McCrady 1996							
McCrady 1999							
McCrady 2004							
Walitzer 2009[3]							
Walitzer 2015							
RCTs: 1+ Study Treatment Conditions Non-Manualized, TSF v. Other Clinical Interventi							
Blondell 2011							
Bogunshutz 2014							
Bowen 2014							
RCTs: All Study Treatment Conditions Manualized, TSF v. TSF Variants							
Kahler 2004							
Timko 2006							
Timko 2007							
Vederhus 2014							
Walitzer 2009[3]							
RCTs: 1+ Study Treatment Conditions Non-Manualized, TSF v. TSF Variants							
Manning 2012							
Quasi-experimental: All Study Conditions Manualized, TSF v. Other Clinical Interventic							
Brooks 2003							
Quasi-experimental: 1+ Study Conditions Non-Manualized, TSF v. Other Clinical Interv							
Blondell 2001							
Humphreys 1996							
Humphreys 2001							
Humphreys 2007							
Ouimette 1997[3]							
Quasi-experimental: 1+ Study Conditions Non-Manualized, TSF v. Other Clinical Interv							
Timko 2011							
Quasi-experimental: 1+ Study Conditions Non-Manualized, TSF v. TSF Variants							
Grant 2017							
Kaskutas 2009 (6m)							
Kaskutas 2009 (12m)							
Ouimette 1997[3]							

1 For outpatients only on DDD

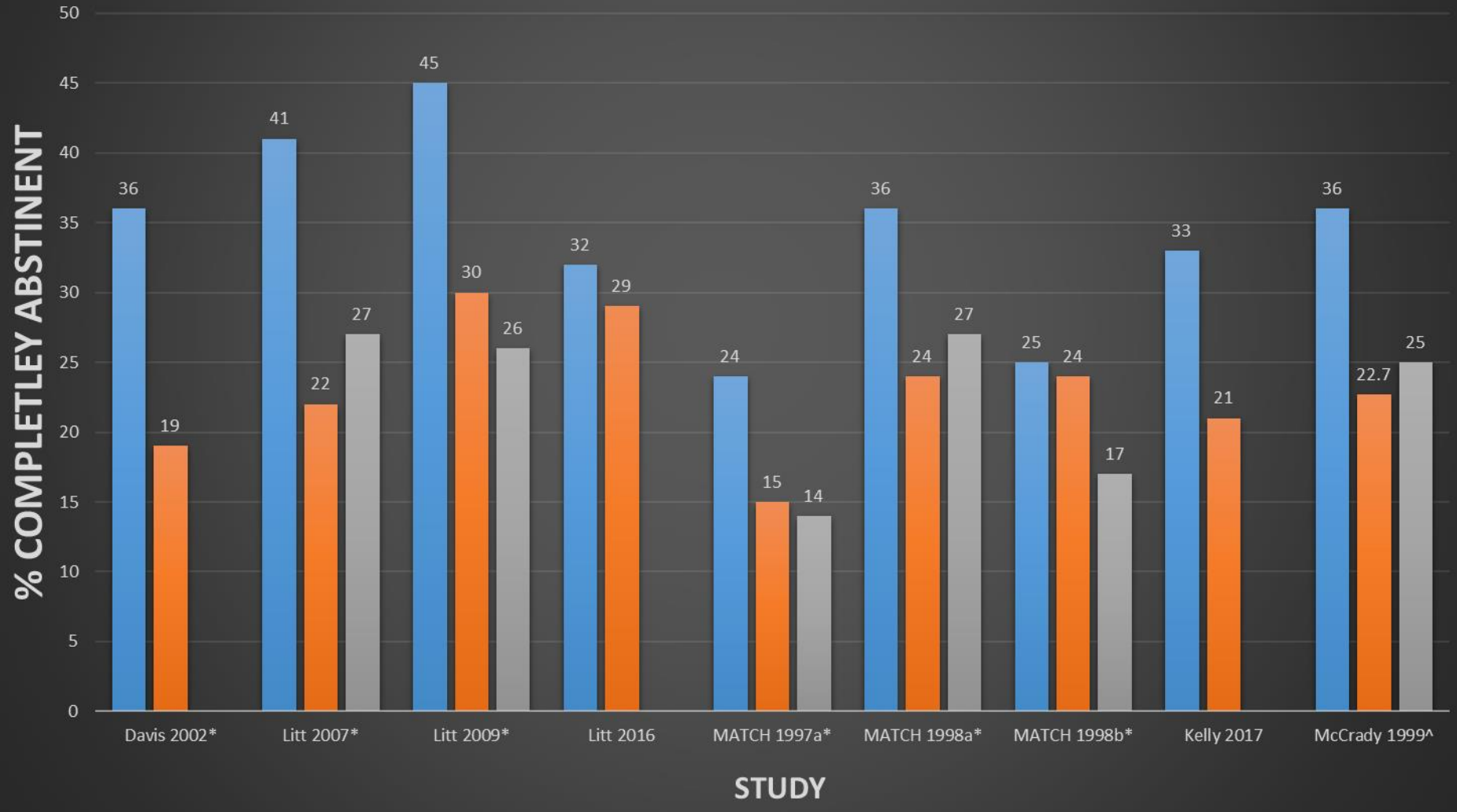
25 original RCTs/Quasi-experimental studies, reporting main findings across 35 publications.

Beneficial effects of TSF interventions observed across several outcomes – particularly sustained remission/abstinence

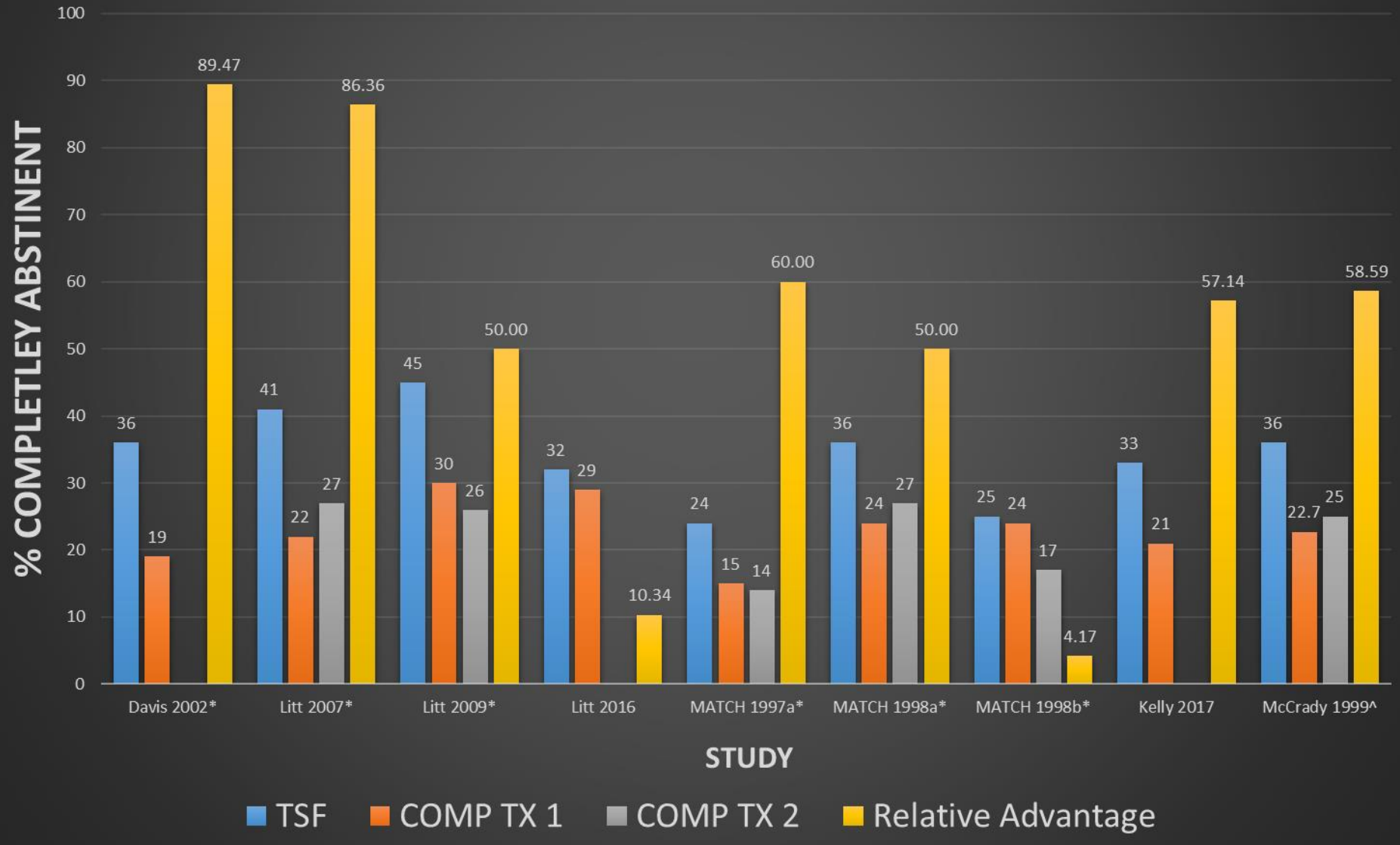
Reduces health care costs while improving alcohol outcomes

Estimates of beneficial effects are conservative as many in comparison conditions also attending AA despite not being facilitated to do so.

TSF Compared to Different Theoretical Orientation Treatments (RCTs all Manualized)



TSF Compared to Different Theoretical Orientation Treatments (RCTs all Manualized)



Addiction
RESEARCH REPORT
doi:10.1111/j.1360-0443.2008.02467.x

Facilitating involvement in Alcoholics Anonymous during out-patient treatment: a randomized clinical trial

Kimberly S. Walitzer, Kurt H. Dermen & Christopher Barrick

Research Institute on Addictions/University at Buffalo, The State University of New York, Buffalo, NY, USA

TSF often produces significantly better outcomes relative to active comparison conditions (e.g., CBT)

Although TSF is not "AA", it's beneficial effect is explained by AA involvement post-treatment.

Addiction (1998) 93(9), 1313–1333

RESEARCH REPORT

Network support for drinki
Anonymous and long-term

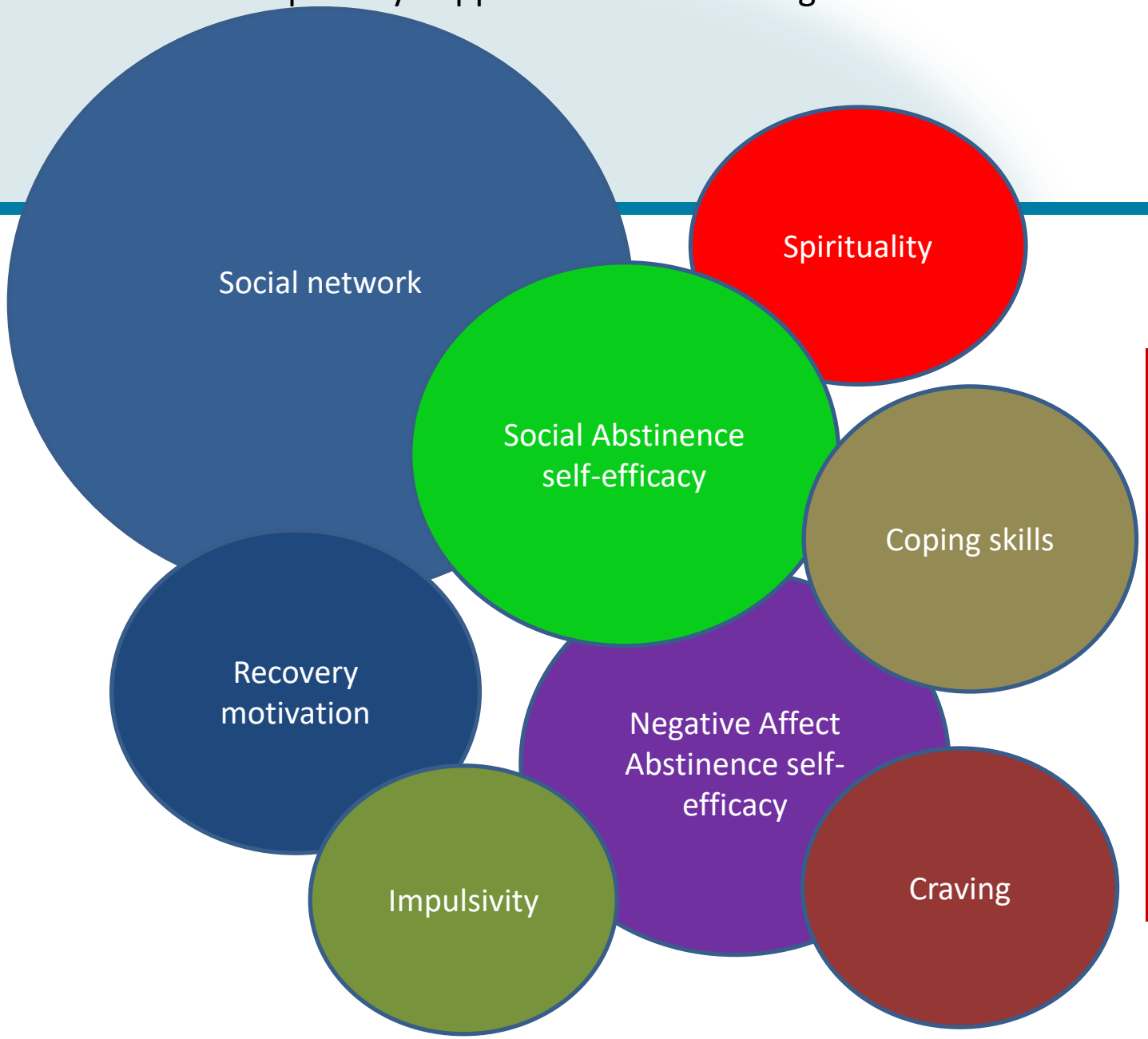
RICHARD LONGABAUGH[1], PHILIP W. WIRTZ[2], ALLEN ZWEBEN[3] & ROBERT L. STOUT[4]

[1]*Brown University, Center for Alcohol & Addiction Studies, Providence, RI,* [2]*George Washington University, Washington, DC,* [3]*University of Wisconsin-Milwaukee, Center for Addiction & Behavioral Health Research, Milwaukee, WI,* [4]*Brown University and Butler Hospital, Center for Alcohol & Addiction Studies, Providence, RI, USA*

Abstract

Aims. *(1) To examine the matching hypothesis that Twelve Step Facilitation Therapy (TSF) is more*

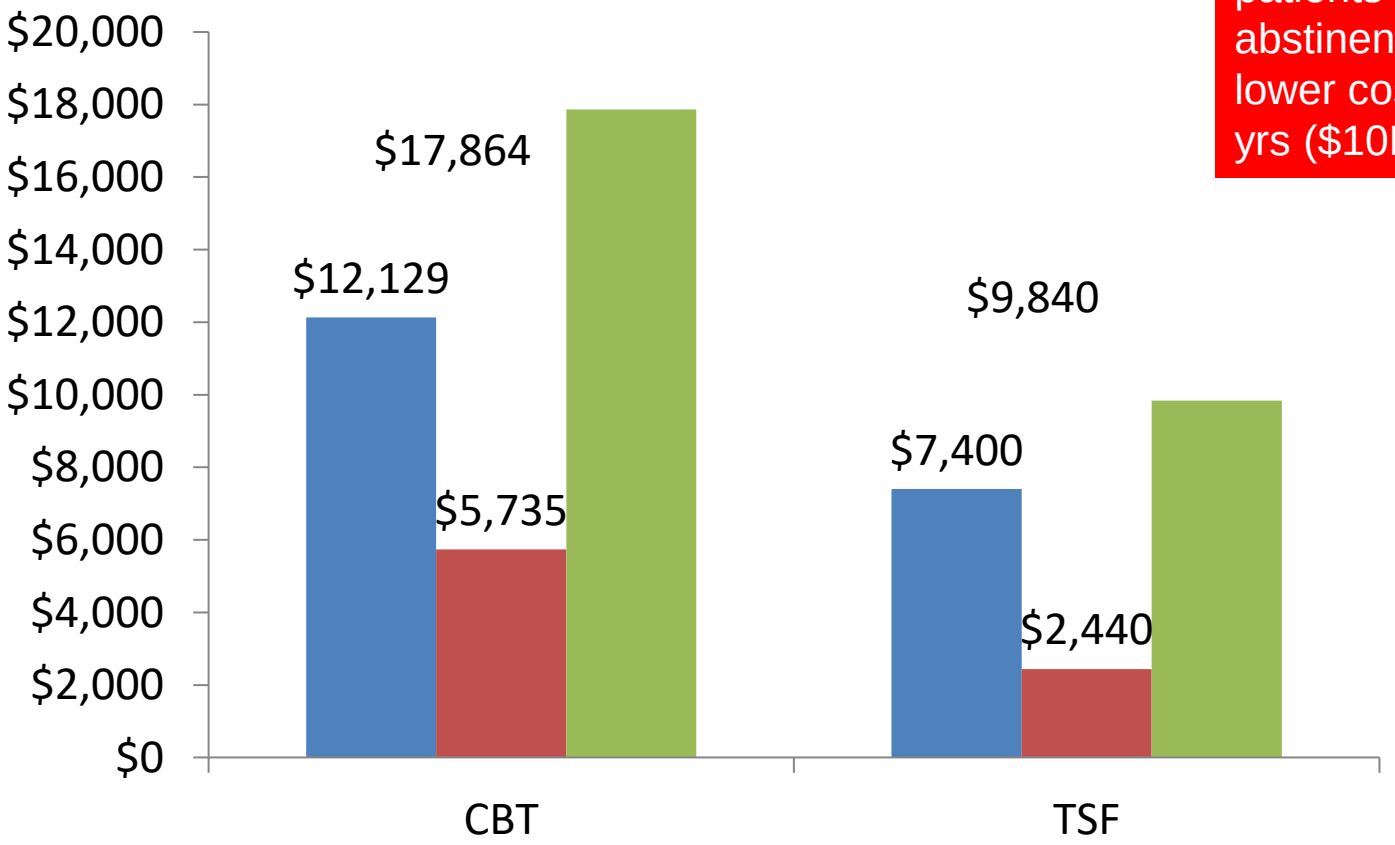
Empirically-supported MOBCs through which AA confers benefit



AA participation in turn is explained by these factors which are similar to the mechanisms operating in formal treatment…

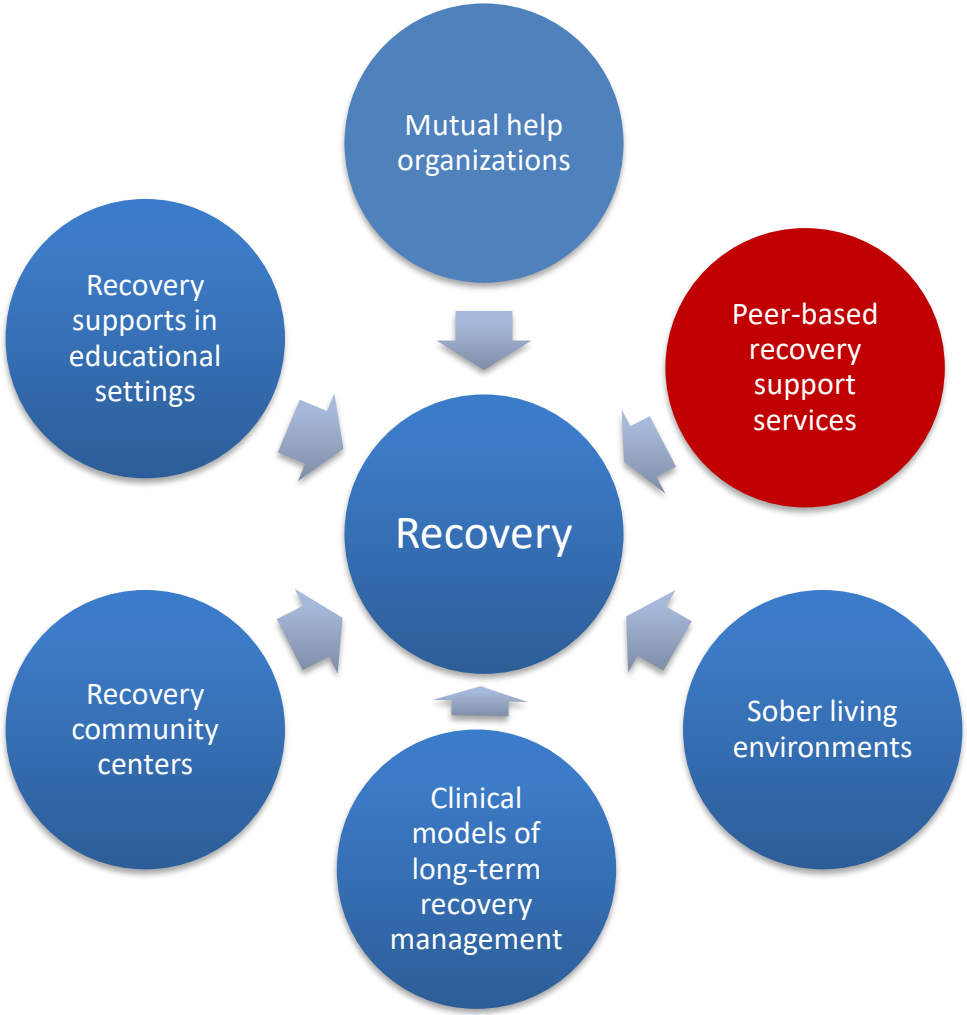
HEALTH CARE COST OFFSET
CBT VS 12-STEP RESIDENTIAL TREATMENT

Compared to CBT-treated patients, 12-step treated patients more likely to be abstinent, at a $8,000 lower cost per pt over 2 yrs ($10M total savings)



Also, higher remission rates, means decreased disease and deaths, increased quality of life for sufferers and their families

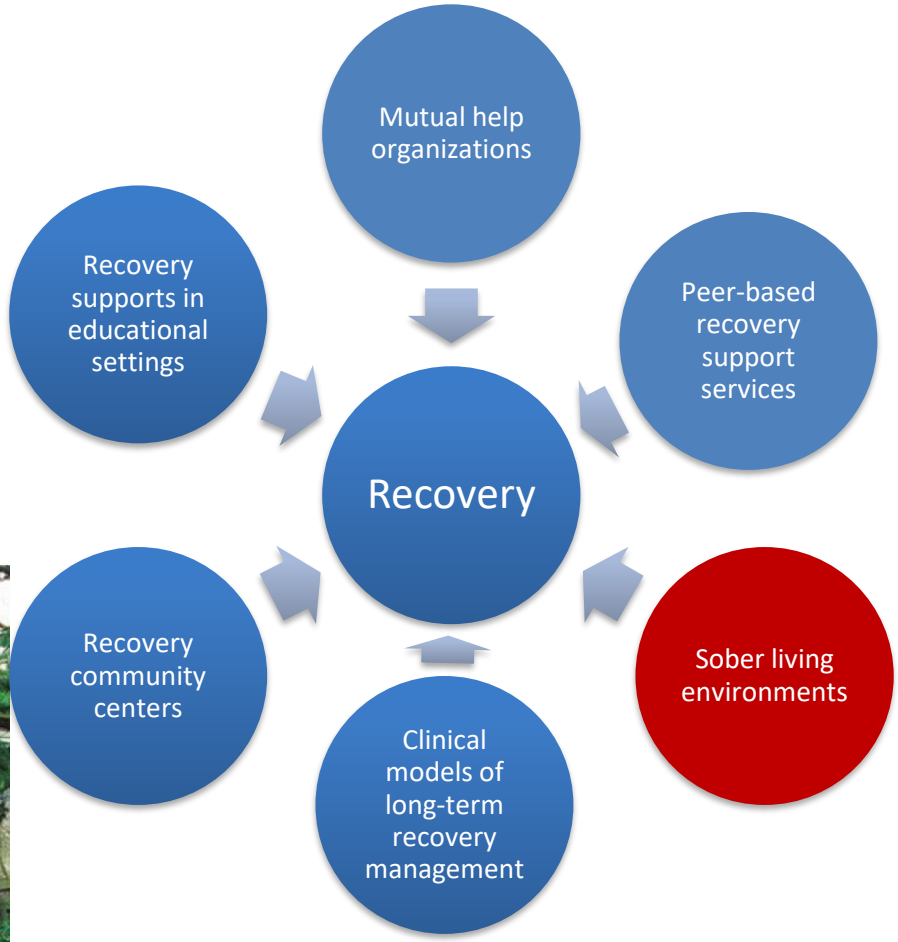
Peer-based Recovery Support Services



Formal Peer Support: Recovery Coaching

- Interacting with peers with lived experience of addiction and recovery and who support recovery help reduce relapse risk. Can facilitate…
  - Increased coping skills and self-efficacy, motivation
  - Serve as a healthy recovery role model and social contact
  - Provide linkages and emotional support (e.g., Sisson and Mallams, 1981)

Sober Living Environments Peer Run/Self-Governing



Societal Benefits of Oxford Houses

- **Sample**: 150 individual completing treatment in the Chicago metropolitan area
- **Design**: Randomized controlled trial
- **Intervention**: Oxford House vs. community-based aftercare services (usual care)
- **Follow-up**: 2 years
- **Outcome**: Substance use, monthly income, incarceration rates

FIELD ACTION REPORT

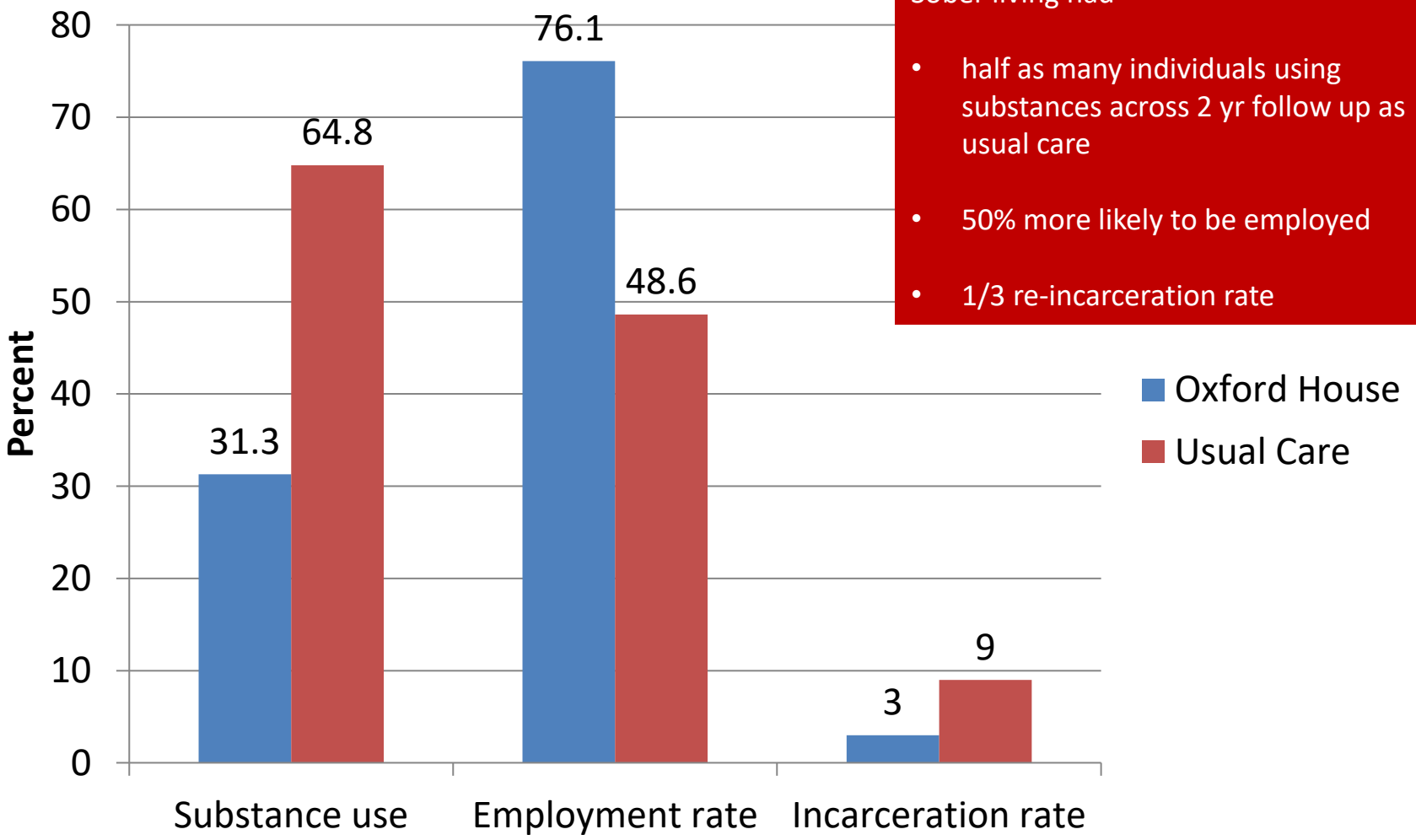
Communal Housing Settings Enhance Substance Abuse Recovery

| Leonard A. Jason, PhD, Bradley D. Olson, PhD, Joseph R. Ferrari, PhD, and Anthony T. Lo Sasso, PhD

Oxford Houses are democratic, mutual help–oriented recovery homes for individuals with substance abuse histories. There are more than 1200 of these houses in the United States, and each home is operated independently by its residents, without help from professional staff.

In a recent experiment, 150 individuals in Illinois were randomly assigned to either an Oxford House or usual-care condition (i.e., outpatient treatment or self-help groups) after substance abuse treatment discharge. At the 24-month follow-up, those in the Oxford House condition compared with the usual-care condition had significantly lower substance use, significantly higher monthly income, and significantly lower incarceration rates. (*Am J Public Health.* 2006;96:1727–1729. doi:10.2105/AJPH.2005.070839)

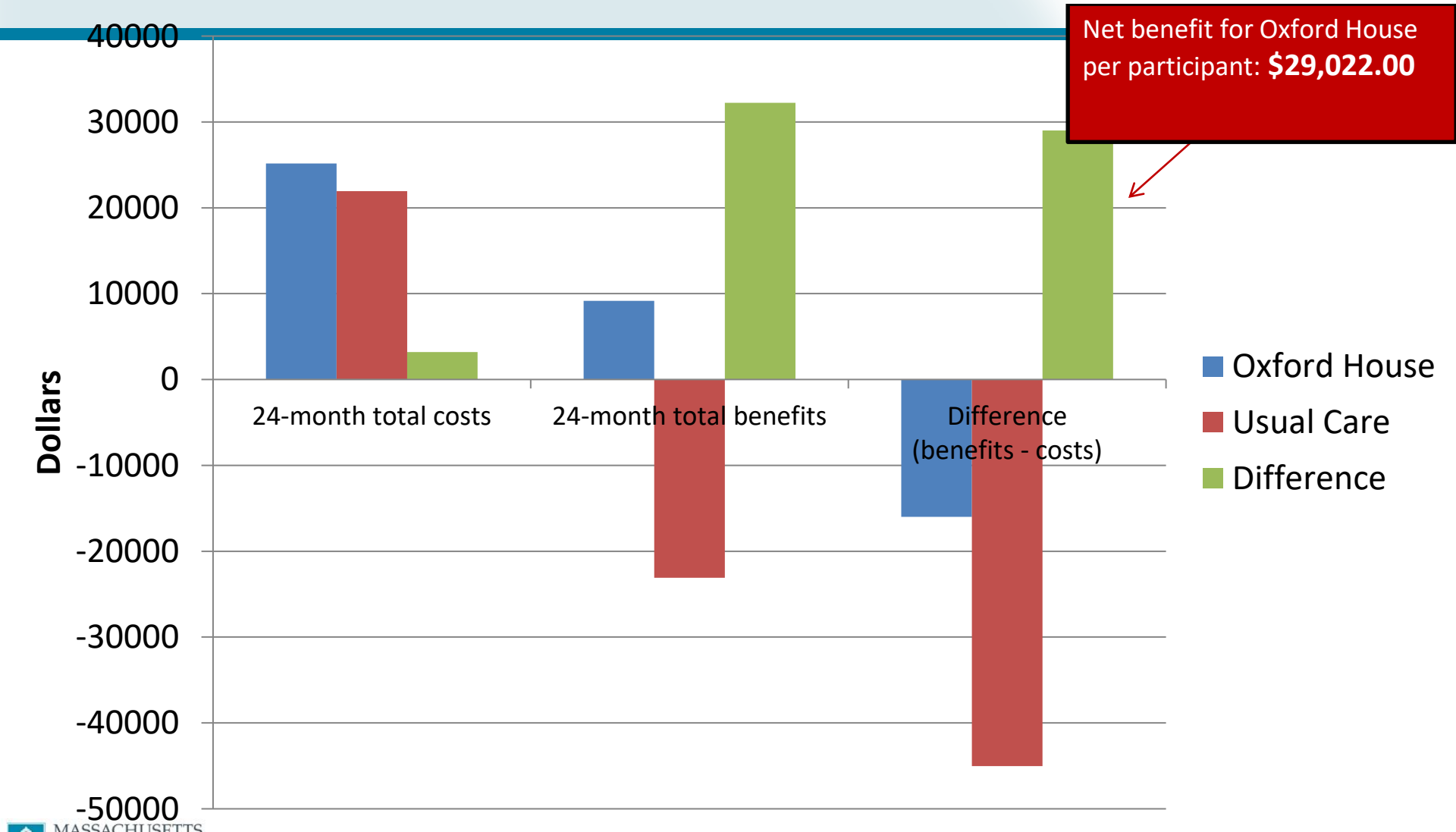
Sober Living Environments are effective…
Oxford House vs. Usual Care



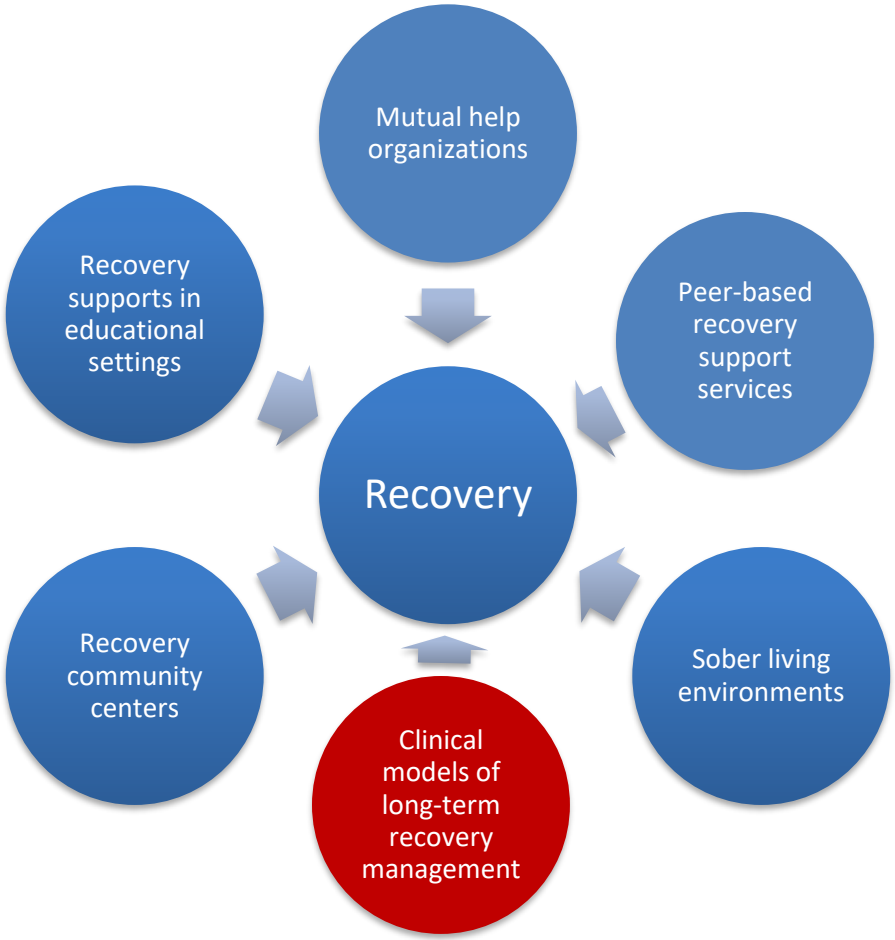
Sober living had –

- half as many individuals using substances across 2 yr follow up as usual care
- 50% more likely to be employed
- 1/3 re-incarceration rate

…and, cost-effective
Mean per-person societal benefits and costs



Clinical Models of Long-term Recovery Management



Recover Management Check-ups

4-year outcomes from the Early Re-Intervention experiment using Recovery Management Checkups

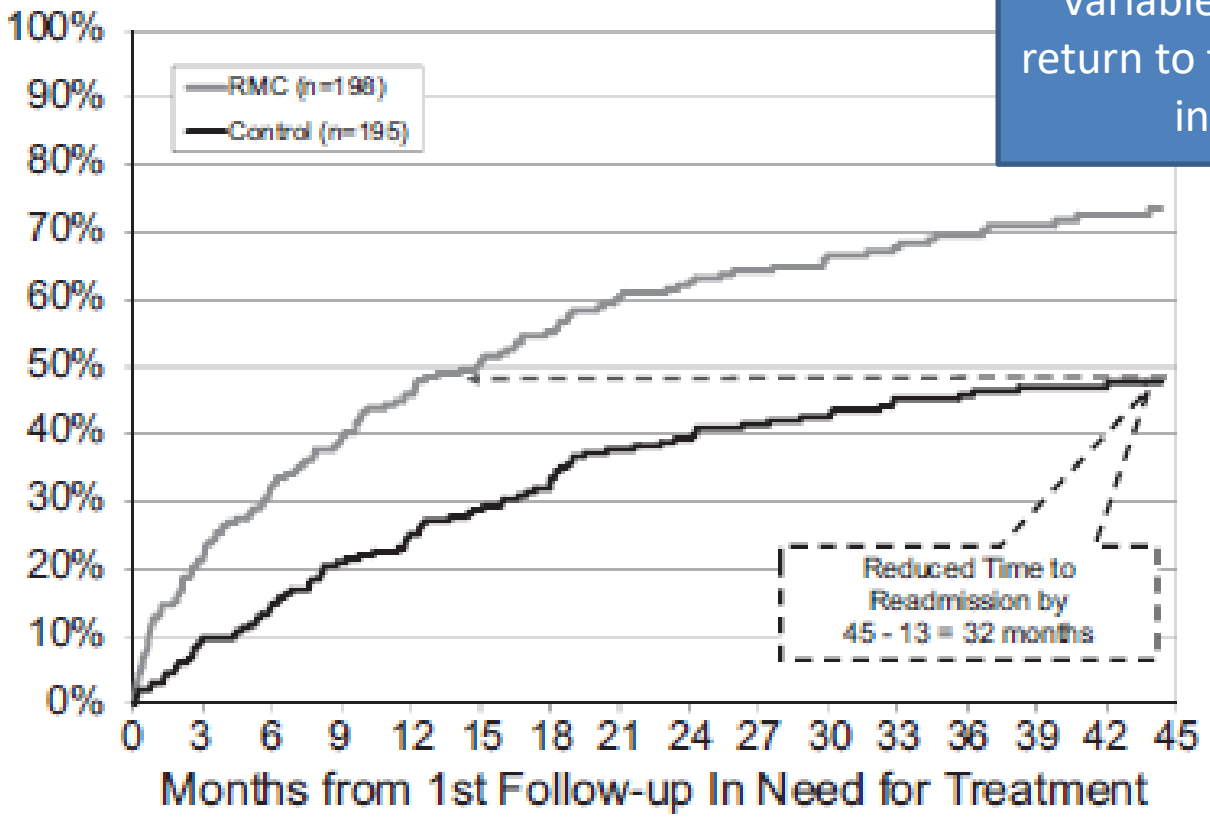
- N=446 adults with SUD, mean age = 38, 54% male, 85% African-American
  - randomly assigned to two conditions:
    - quarterly assessment only
    - quarterly assessment plus RMC
- Recovery Management Checkups
  - Linkage manager who used MI to review participant's substance use, discuss treatment barrier/solutions, schedule an appointment for treatment re-entry, and accompany participant through the intake
  - If participants reported no substance use in previous quarter, linkage manager reviewed how abstinence has changed their lives and what methods have worked to maintain abstinence

Source: Dennis & Scott (2012). Drug and Alcohol Dependence, 121, 10-17

Results 1
Return to treatment

- Participants in RMC condition sig. more likely to return to treatment sooner

Of 18 vars tested, the only variables that predicted return to treatment was the intervention



Source: Dennis & Scott (2012). Drug and Alcohol Dependence, 121, 10-17

Addiction
RESEARCH REPORT
doi:10.1111/add.12335

Cost-effectiveness analysis of Recovery Management Checkups (RMC) for adults with chronic substance use disorders: evidence from a 4-year randomized trial

Kathryn E. McCollister[1], Michael T. French[2], Derek M. Freitas[3], Michael L. Dennis[4], Christy K. Scott[5] & Rodney R. Funk[4]

Department of Public Health Sciences, Miller School of Medicine, University of Miami, Miami, FL, USA,[1] Department of Sociology, University of Miami, Coral Gables, FL, USA,[2] New York University, School of Medicine, New York, NY, USA,[3] Chestnut Health Systems, Normal, IL, USA[4] and Chestnut Health Systems, Chicago, IL, USA[5]

ABSTRACT

Aims This study performs the first cost-effectiveness analysis (CEA) of Recovery Management Checkups (RMC) for adults with chronic substance use disorders. **Design** Cost-effectiveness analysis of a randomized clinical trial of RMC. Participants were assigned randomly to a control condition of outcome monitoring (OM-only) or the experimental condition OM-plus-RMC, with quarterly follow-up for 4 years. **Setting** Participants were recruited from the largest central intake unit for substance abuse treatment in Chicago, Illinois, USA. **Participants** A total of 446 participants who were 38 years old on average, 54% male, and predominantly African American (85%). **Measurements** Data on the quarterly cost per participant come from a previous study of OM and RMC intervention costs. Effectiveness is measured as the number of days of abstinence and number of substance use-related problems. **Findings** Over the 4-year trial, OM-plus-RMC cost on average $2184 more than OM- averaged 1026 days abstinent and had 89 substance use-related prob reported 126 substance use-related problems. Mean differences for significant ($P < 0.01$). The incremental cost-effectiveness ratio for O $59.51 per reduced substance-related problem. When additional c OM-plus-RMC was less costly and more effective than OM-only. **Conc** a cost-effective and potentially cost-saving strategy for promoting a problems among chronic substance users.

Keywords Chronic substance use disorder, cost-effectiveness ana ment Checkups.

Correspondence to: Kathryn E. McCollister, Department of Public Health Sciences (f University of Miami Miller School of Medicine, Clinical Research Building, Office E-mail: kmccolli@med.miami.edu

Submitted 10 January 2013; initial review completed 26 March 2013; final version accepted 8 August 2013

RMCs are a cost-effective and potentially cost-saving Strategy for promoting abstinence and reducing substance use-related problems among chronic cases of SUD

Recovery Community Centers

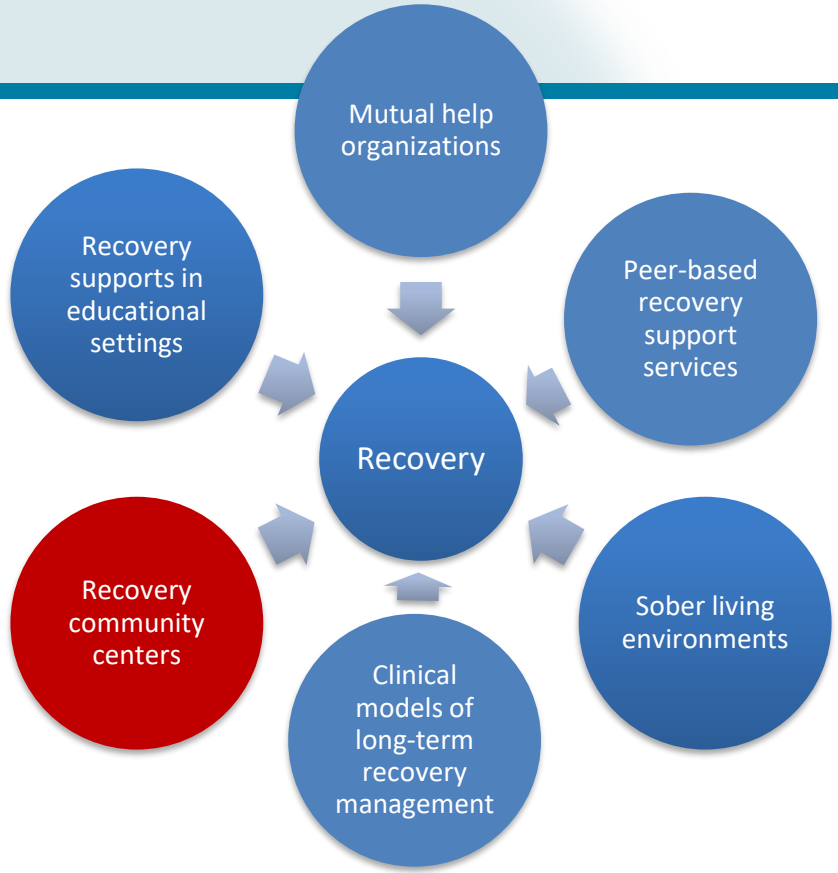
HOPE for NEW HAMPSHIRE RECOVERY

CONNECTICUT COMMUNITY CCAR

Anchor

Recovery Community Center

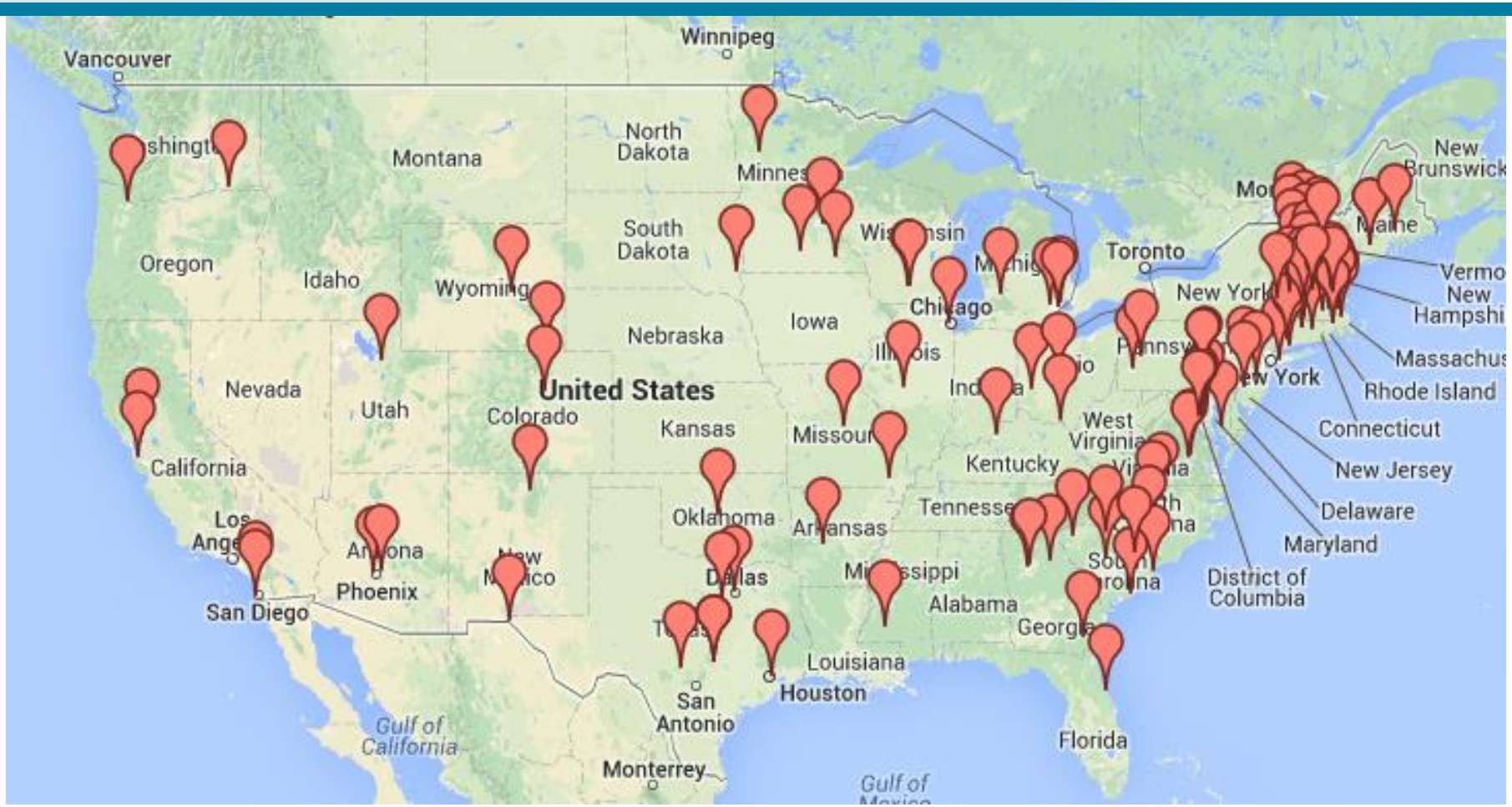
Peer-to-peer support services



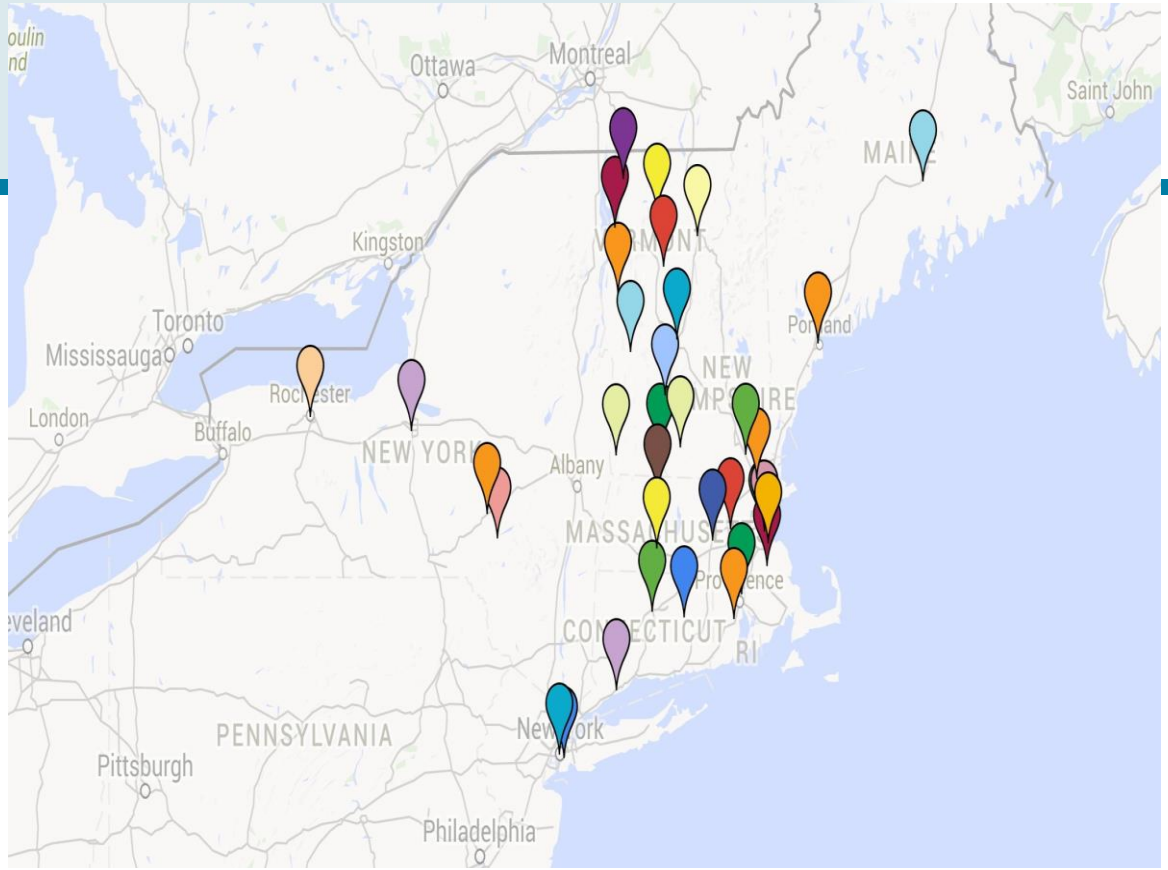
Recovery Community Centers are…

- locatable sources of community-based recovery support beyond the clinical setting, helping members achieve sustained recovery by building and successfully mobilizing personal, social, environmental, and cultural resources.

RCCs in the United States



There are currently more than 80 centers operating nationally



RCCs in New York and New England

There are 35 centers currently operating throughout New England and New York.

Principles of RCCs

Source of recovery capital at the community level

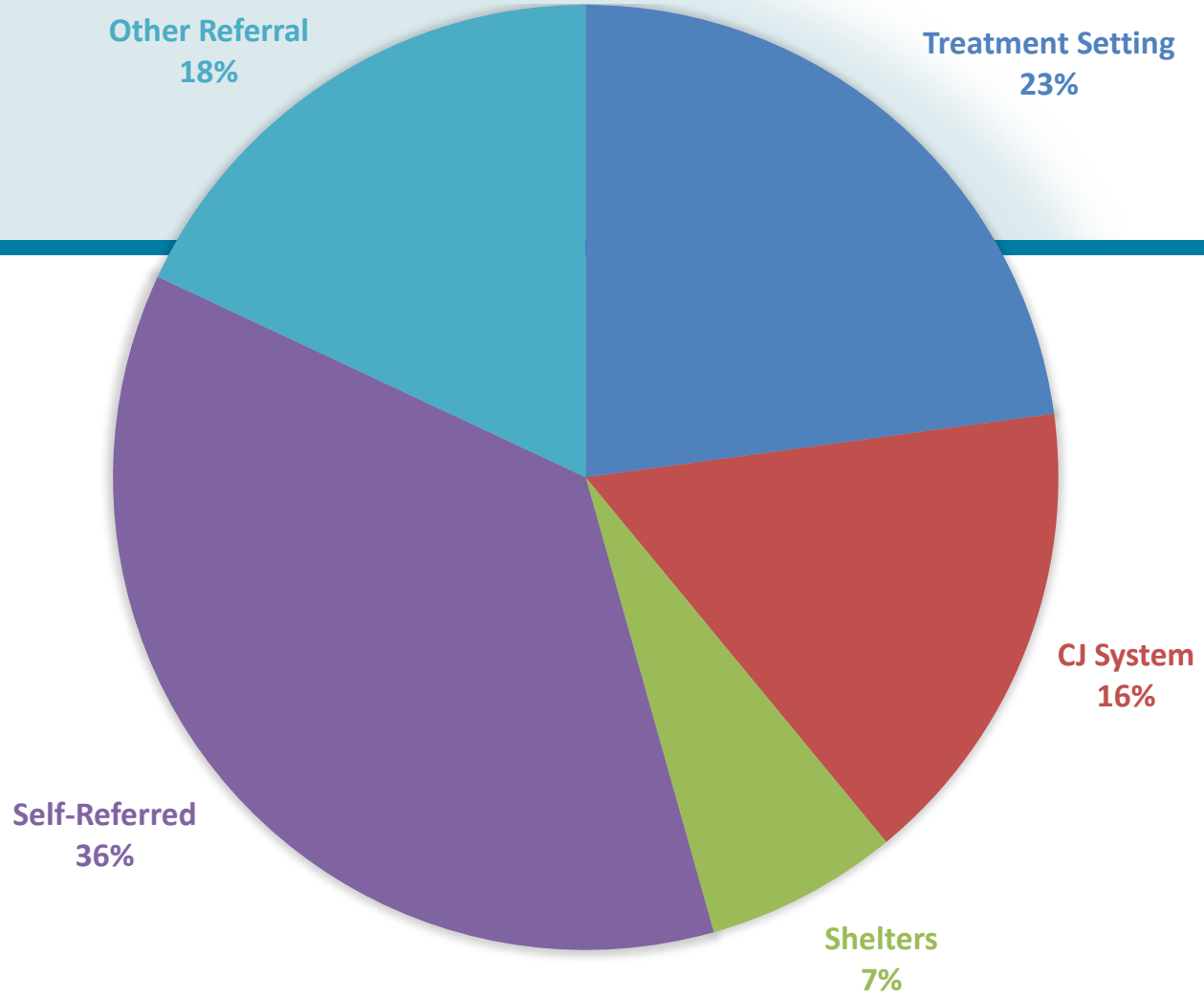
- Provide different services than formal treatment
- Offer more formal and tangible linkages to social services, employment, training and educational agencies than do mutual-help organizations

There are many pathways to recovery

- RCCs are not allied with any specific recovery philosophy or model

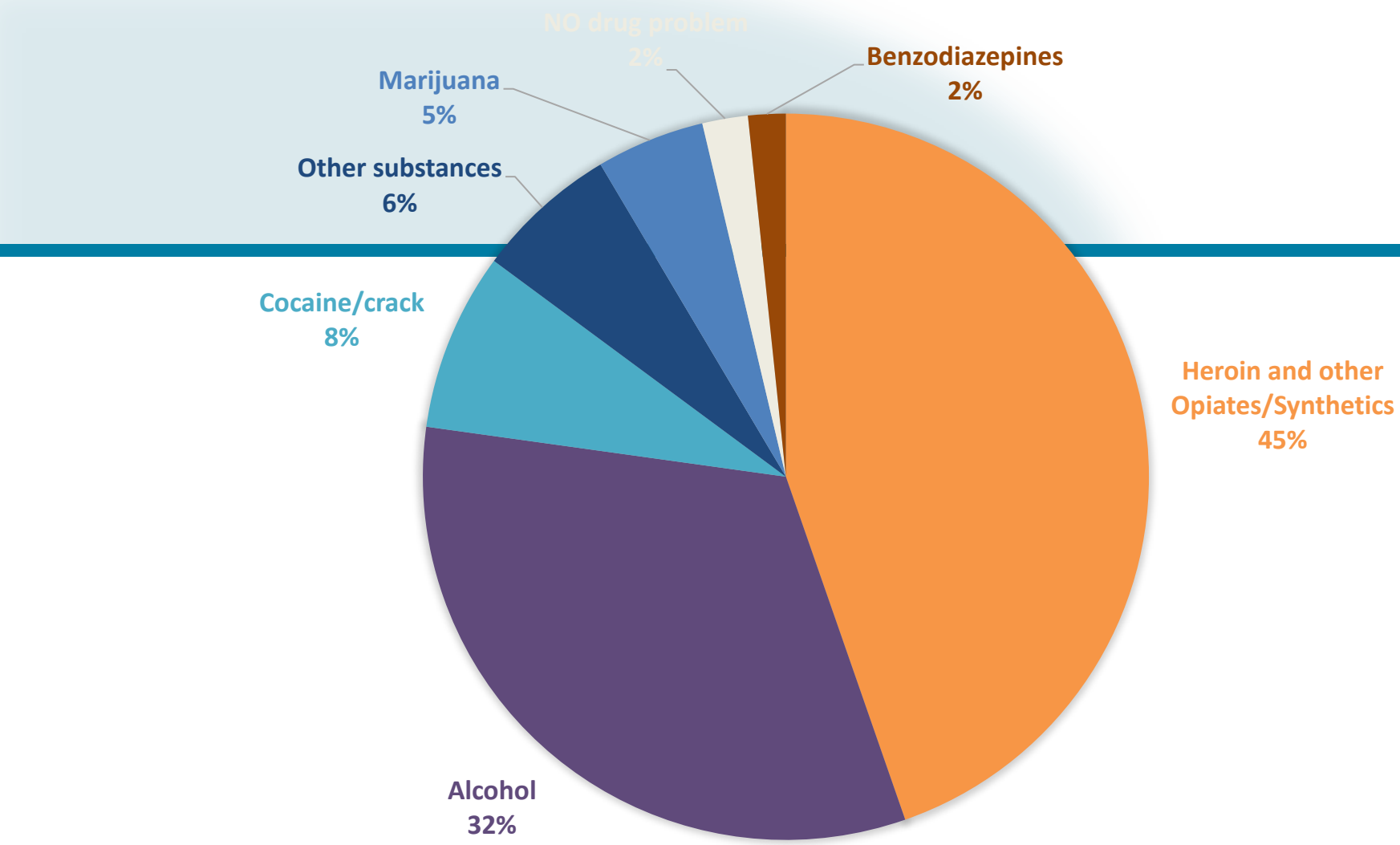
Services offered

All Recovery Meetings	Telephone Recovery Support	Recovery Coaching
Family Support Groups	Recovery Trainings	Access to resources



Center Referral Sources

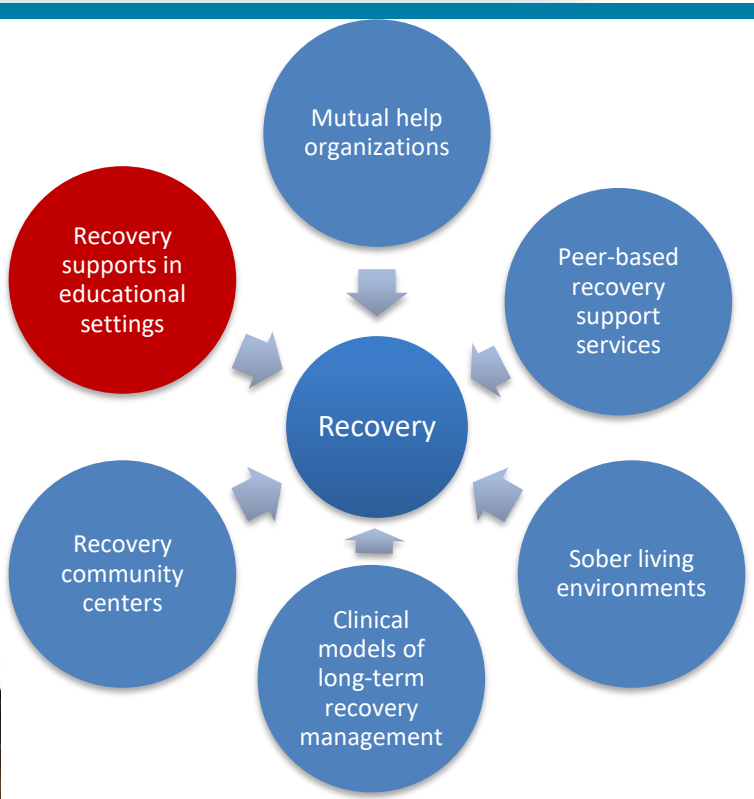
RCC members are referred to the centers from a variety of sources. Other referral sources include word of mouth (e.g., friends and family).



Members' Primary Substance Problems

Director estimates cite heroin and other opioids (45%) and alcohol (32%) as the most prevalent primary substances used by center members.

Recovery Supports In Educational Settings

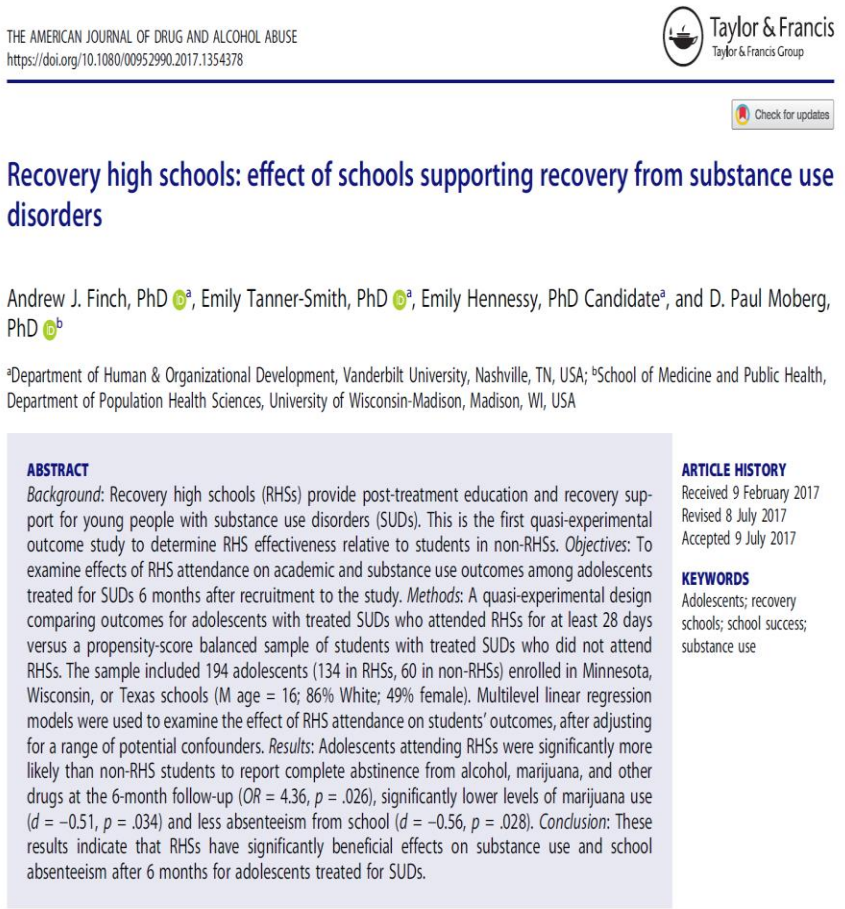


Recovery High Schools….

- …. are secondary schools designed specifically for students in recovery from SUD.
- Each school operates differently depending on available community resources and state standards, but each recovery high school shares the following goals:
  - To educate all students in recovery from SUD and/or co-occurring disorders
  - To meet state requirements for awarding a secondary school diploma
  - To support students in working a strong program of recovery

Recovery High School Participation Effects compared to Non-recovery High school

- Methods: Quasi-experiment comparing outcomes for treated adolescents who attended RHSs for at least 28 days
- N=194 (134 in RHSs, 60 in non-RHSs) enrolled in Minnesota, Wisconsin, or Texas schools (M age = 16; 86% White; 49% female).
- **Results: Adolescents attending RHSs 4x more likely than non-RHS students to report complete abstinence from alcohol, marijuana, and other drugs at the 6-month follow-up (OR = 4.36, p = .026), significantly lower levels of marijuana use (d = –0.51, p = .034) and less absenteeism from school (d = –0.56, p = .028).**



THE AMERICAN JOURNAL OF DRUG AND ALCOHOL ABUSE
https://doi.org/10.1080/00952990.2017.1354378

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Taylor & Francis Group

Check for updates

Recovery high schools: effect of schools supporting recovery from substance use disorders

Andrew J. Finch, PhD [a], Emily Tanner-Smith, PhD [a], Emily Hennessy, PhD Candidate[a], and D. Paul Moberg, PhD [b]

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ABSTRACT

Background: Recovery high schools (RHSs) provide post-treatment education and recovery support for young people with substance use disorders (SUDs). This is the first quasi-experimental outcome study to determine RHS effectiveness relative to students in non-RHSs. *Objectives*: To examine effects of RHS attendance on academic and substance use outcomes among adolescents treated for SUDs 6 months after recruitment to the study. *Methods*: A quasi-experimental design comparing outcomes for adolescents with treated SUDs who attended RHSs for at least 28 days versus a propensity-score balanced sample of students with treated SUDs who did not attend RHSs. The sample included 194 adolescents (134 in RHSs, 60 in non-RHSs) enrolled in Minnesota, Wisconsin, or Texas schools (M age = 16; 86% White; 49% female). Multilevel linear regression models were used to examine the effect of RHS attendance on students' outcomes, after adjusting for a range of potential confounders. *Results*: Adolescents attending RHSs were significantly more likely than non-RHS students to report complete abstinence from alcohol, marijuana, and other drugs at the 6-month follow-up (*OR* = 4.36, *p* = .026), significantly lower levels of marijuana use (*d* = −0.51, *p* = .034) and less absenteeism from school (*d* = −0.56, *p* = .028). *Conclusion*: These results indicate that RHSs have significantly beneficial effects on substance use and school absenteeism after 6 months for adolescents treated for SUDs.

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Collegiate Recovery Programs

- There are almost 50 CRPs recognized by Association of Recovery in Higher Education (ARHE)
- Data in two model programs suggests relapse rates are very low at approximately 4% to 13% in any

Laudet et al., 2014

Summary

Treating Addiction as a Chronic Disease

- RSSs open up new pathways to recovery and can enhance and extend the effects of professionally-delivered care by….
  - Helping change social networks towards those that model and support recovery in the communities in which people live
  - Helping build resilience, buffer stress, and increase recovery coping, confidence and motivation over the long-term
  - Help individuals build further “recovery capital” by providing supports in high risk educational environments like colleges/high schools, providing linkages to employment opportunities, and health/social services
  - Providing ongoing recovery-specific support at little cost reducing burden on professional health services while enhancing remission rates, thereby reducing health care costs.

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