Sponsoring Organizations

RECOVERY RESEARCH INSTITUTE

Opioid Response Network

SAMHSA
Substance Abuse and Mental Health Services Administration
Opioid Response Network

- The SAMHSA-funded *Opioid Response Network (ORN)* assists states, organizations and individuals by providing the resources and technical assistance they need locally to address the opioid crisis and stimulant use.
  - Technical assistance is available to support the evidence-based prevention, treatment and recovery of opioid use disorders and stimulant use disorders.

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Working With Communities

- The Opioid Response Network (ORN) provides local, experienced consultants in prevention, treatment and recovery to communities and organizations to help address this opioid crisis and stimulant use.
  - ORN accepts requests for education and training.
  - Each state/territory has a designated team, led by a regional Technology Transfer Specialist (TTS), who is an expert in implementing evidence-based practices.
Contact the Opioid Response Network

✧ To ask questions or submit a request for technical assistance:

- Visit www.OpioidResponseNetwork.org
- Email orn@aaap.org
- Call 401-270-5900
Enhancing Recovery Through Science

recoveryanswers.org

Recovery Research Institute

Sign up for the free monthly Recovery Bulletin

@recoveryanswers
Outline

- Where have we come from? Where are we now? Where are we going? 50 years of Addiction Science, Practice, and Policy:
- What is “recovery” and why is everyone talking about it?
- Theory of addiction recovery: a biopsychosocial perspective
- Services for Attaining and sustaining addiction remission and recovery
- State of the Science and future directions
Outline

Where have we come from? Where are we now? Where are we going? 50 years of Addiction Science, Practice, and Policy:

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During the past 50 yrs since “War on Drugs” declared, we have moved from “Public Enemy No. 1” to “Public Health Problem No. 1”
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..
2013 ONDCP Director Kerlikowske declares move away from “war on drugs” toward broader public health approach
Public Health Approaches to Addressing Drug-Related Crime: Drug Courts
Public Health Approaches to Law Enforcement

- Chief Campanello
  - Angel Program

“Help not Handcuffs”
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.
Paradigm Shifts
Genetics, Genomics, Pharmacogenetics
Neuroscience: Neural plasticity
Changes in the brain in recovery
### STAGES OF CHANGE

**PRECONTEMPLATIVE**
In this stage, individuals are not even thinking about changing their behavior. They do not see their addiction as a problem: they often think others who point out the problem are exaggerating.

**CONTEMPLATIVE**
In this stage people are more aware of the personal consequences of their addiction & spend time thinking about their problem. Although they are able to consider the possibility of changing, they tend to be ambivalent about it.

**PREPARATION**
In this stage, people have made a commitment to make a change. This stage involves information gathering about what they will need to change their behavior.

**ACTION**
In this stage, individuals believe they have the ability to change their behavior & actively take steps to change their behavior.

**MAINTENANCE**
In this stage, individuals maintain their sobriety, successfully avoiding temptations & relapse.

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**HARM REDUCTION**
- Emergency Services (i.e. Narcan)
- Needle Exchanges
- Supervised Injection Sites

**SCREENING & FEEDBACK**
- Brief Advice
- Motivational Interventions

**CLINICAL INTERVENTION**
- Phases/Levels (e.g., inpatient, residential, outpatient)
- Intervention Types
  - Psychosocial (e.g., Cognitive Behavioral Therapy)
  - Medications: Agonists (e.g., Buprenorphine, Methadone) & Antagonists (Naltrexone)

**NON-CLINICAL INTERVENTION**
- Self-Management/Natural Recovery (e.g., self-help books, online resources)
- Mutual Help Organizations (e.g., Alcohols Anonymous, SMART Recovery, Lifering Secular Recovery)
- Community Support Services (e.g., Recovery Community Centers, Recovery Ministries, Recovery Employment Assistance)

**CONTINUING CARE (3m- 1 year)**
- Recovery Management Checkups, Telephone Counseling, Mobile Applications, Text Message Interventions

**RECOVERY MONITORING (1-5+ yrs)**
- Continued Recovery Management Checkups, therapy visits, Primary Care Provider Visits
What people really need is a good listening to...
“Quitting smoking is easy, I’ve done it dozens of times” – Mark Twain
Swift, certain, modest, consequences shape behavioral choices...
Effective Medications
Harm Reduction Strategies

- Anti-craving/anti-relapse medications ("MAT")
- Overdose reversal medications (Narcan)
- Needle service programs
- Safe supply/testing services
- Heroin prescribing
- Safe Injection Facilities/Safe Consumption sites/Overdose prevention facilities
EQUIFINALITY: 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”).
More recently, the first ever U.S. Surgeon General’s Report on Alcohol, Drugs, and Health was published in 2016 describing the nature of addiction, treatment, and recovery based on 50 yrs of research and policy ...
The clinical course of addiction and achievement of stable recovery can take a long time ...

Addiction Onset

Help Seeking

Full Sustained Remission

Reinstatement Risk drops below 15%

4-5 years

8 years

5 years

Opportunity for earlier detection through screening in non-specialty settings like primary care/ED

Self-initiated cessation attempts

4-5 Treatment episodes/mutual-help

Continuing care/mutual-help

60%-75% of individuals with SUD will achieve full sustained remission

Recovery Priming

Recovery Mentoring

Recovery Monitoring
Recovery Indices by Years Since Problem Resolution

- Quality of Life
- Psychological Distress
- Happiness
- Self Esteem
- Recovery Capital

Kelly et al (2018) *Alcoholism: Clinical and Experimental Research*
Inflection point at around 5 yrs


Recovery Indices by Years Since Problem Resolution

- Quality of Life
- Psychological Distress
- Happiness
- Self Esteem
- Recovery Capital

Same QOL as gen. pop. not achieved until around 15yrs
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) neglected
Traditional addiction treatment approach: Burning building analogy

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Where have we come from? Where are we now? Where are we going? 50 years of Addiction Science, Practice, and Policy:

What is “recovery” and why is everyone talking about it?

Theory of addiction recovery: a biopsychosocial perspective

Services for Attaining and sustaining addiction remission and recovery

State of the Science and future directions
What is “Recovery”? 

• Addiction “Recovery”, culturally, is both a process and an outcome…

• **Process:** Lots of definitions – most describe a process of adaptive change and enhanced functioning, resilience, and self-determination

• **Outcome:** Also an outcome – people describe themselves as “being in recovery” currently but did not previously - reflecting also a categorical endpoint
Recovery often goes beyond surviving to thriving
Contains both remission and resilience

**Remission**

What is subtracted - (symptoms/signs); return to premorbid state

**Resilience**

What is added - “fireproofing”/protecting against vulnerability to future hazards
A Deck Metaphor...

- Newly replaced deck makes deck functional
- Staining the deck protects it against vulnerability to hazards/harms (and looks better too...)
SUD Process Stages (5 Rs)

- Recurrence
- Remission
- Resilience
- Recovery
- Renaissance
Outline

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So, why does establishing remission and stable recovery take such a long time?

Addiction Onset

Help Seeking

4-5 years

Self-initiated cessation attempts

4-5 years

4-5 Treatment episodes/mutual-help

8 years

5 years

Continuing care/mutual-help

Reinstatement Risk drops below 15%

50-60% of individuals with addiction will achieve full sustained remission

Opportunity for earlier detection through screening in non-specialty settings like primary care/ED

Recovery Priming

Recovery Mentoring

Recovery Monitoring
ADDICTION IS A COMPLEX DISORDER

RISK FACTORS

Biology/Genes
- Genetics
- Gender
- Mental disorders

Environment
- Chaotic home and abuse
- Parent’s use and attitudes
- Peer influence
- Community attitudes
- Poor school achievement

Drug
- Route of administration
- Effect of drug itself
- Early use
- Availability
- Cost

Brain Mechanisms

Addiction
RECOVERY IS A COMPLEX PROCESS

RESILIENCE FACTORS

Biology/Genes
- Genetics
- Gender
- Other Mental Illness

Environment
- Treatment
- Stigma and discrimination
- Social support
- Cultural/Community attitudes

Brain Mechanisms
- Housing
- Employment
- Income
- Education
- Healthcare access/quality

Recovery Capital
- Community
- Hope + Optimism
- Self-Esteem
- Meaning + Purpose
- Empowerment

Recovery
All of these brain regions must be considered in developing strategies to effectively treat addiction.
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
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 capacity to experience normal levels of reward via...
• Down-regulated dopamine D2 receptor volume increasing risk of protracted dysphoria/anhedonia and relapse risk
Neuroscience of Recovery Capital

If addiction is a disorder of radically altered/damaged brain neurocircuits could social factors, recovery housing, and employment, change the brain, mitigate stress, upregulate down-regulated receptor systems, and increase the chances of long-term remission?
Social factors influence both stress and reward ... as well as health and longevity
Social Buffering

- Stress-buffering effects of social relationships—one of the major findings of past century
- Mechanisms of this poorly understood
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
...and researchers have started to examine possible neurobiological connections between social support and individual stress responses.

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  Lowered capacity to experience normal levels of reward via...
  - Down-regulated dopamine D2 receptor volume increasing risk of protracted dysphoria/anhedonia and relapse risk
D2/D3 RECEPTOR BINDING & SOCIAL STATUS AND SUPPORT

AIM
Assess whether D2/3 receptor levels correlate with social status and social support (particularly, to determine if low social status and low social support correlate with low D2/3 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 D2/3 receptor binding potential (BP)

MEASURES
• Barratt Simplified Measure of Social Status (BMSSSS) to measure social status
• Scale of Perceived Social Support (MSPSS) to measure social support
• [11C]raclopride to measure D2/3 receptor binding in the striatum

OUTCOMES
• Positive correlation between D2/3 receptor binding potential and social status
• Positive correlation between D2/3 receptor binding potential and perceived social support
• Results similar to prior studies of nonhuman primates, which show higher D2/3 receptor levels in monkeys who are dominant in their social hierarchy, compared to those who are subordinante
D2/D3 RECEPTOR BINDING & SOCIAL STATUS AND SUPPORT

**Figure 1.** Correlation between [11C]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 [11C]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.

**D2/D3 receptor binding increases as social status increases.**

**D2/D3 receptor binding increases as social support increases.**

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

<table>
<thead>
<tr>
<th>Social rank</th>
<th>[18F]FCP distribution volume ratios</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individually housed</td>
<td>Socially housed</td>
</tr>
<tr>
<td>1</td>
<td>2.49 ± 0.08</td>
<td>3.04 ± 0.23hc</td>
</tr>
<tr>
<td>2</td>
<td>2.58 ± 0.13</td>
<td>2.99 ± 0.13</td>
</tr>
<tr>
<td>3</td>
<td>2.58 ± 0.13</td>
<td>2.88 ± 0.30</td>
</tr>
<tr>
<td>4</td>
<td>2.40 ± 0.06</td>
<td>2.49 ± 0.10</td>
</tr>
</tbody>
</table>

Mean ± s.e.m. [18F]FCP DV in male cynomolgus monkeys as a function of social rank while individually and socially housed. a,b,c For individually housed scans, these numbers represent eventual social rank. bSignificantly higher than individually housed ‘dominants.’ cSignificantly higher than socially housed subordinates.
When all monkeys were individually housed, no difference in DA D2 receptor volume was observed.

After 3 months of social housing, dominant monkeys showed a 22% increase in DA D2 volume; subordinate monkeys showed 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.

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

Human Implications: Facilitating greater access to and availability of recovery capital may induce neuroreceptor and neurochemical change that reduces risk of SUD recurrence. This may be reflected psychologically as instilling hope, empowerment, increasing environmental control and social contact and social mobility through the environment and thereby reduce relapse risk...

eventual social rank. *Significantly higher than individually housed ‘dominants.’ †Significantly higher than socially housed subordinates.
Historically, two major ways most societies have addressed endemic alcohol/drug problem...

- Professionally-directed Treatment
- Peer-Led Mutual-help organizations
Now, third wave of services emerging... to try to meet addiction needs of recovery capital...

- Professionally-directed Treatment
- Peer-Led Mutual-help organizations
- Recovery Support Services
In fact, the concept of SUD “treatment” is changing...

Components of Comprehensive Drug Addiction Treatment

- Vocational Services
- Family Services
- Legal Services
- Mental Health Services
- Medical Services
- Educational Services
- HIV/AIDS Services

Assessment
- Evidence-Based Treatment
- Substance Use Monitoring
- Clinical and Case Management
- Recovery Support Programs
- Continuing Care

The best treatment programs provide a combination of therapies and other services to meet the needs of the individual patient.
Cadre of Emerging and Growing Long-term Recovery Support Services now exist...

- Mutual help organizations
- Peer-based recovery support services
- Recovery supports in educational settings
- Recovery community centers
- Recovery Residences
RSS Goal

RSS → Remission + Resilience
RSS Mechanisms

RSS → Recovery Capital → Bio Psycho Social Change → Remission + Resilience
Outline

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Mutual help Organizations

- Recovery organizations
- Peer-based recovery support services
- Recovery community centers
- Sober living environments
- Clinical models of long-term recovery management
## Substance Focused Mutual-help Groups

<table>
<thead>
<tr>
<th>Name</th>
<th>Year of Origin</th>
<th>Number of groups in U.S.</th>
<th>Location of groups in U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholics Anonymous (AA)</td>
<td>1935</td>
<td>65,000</td>
<td>all 50 States</td>
</tr>
<tr>
<td>Narcotics Anonymous (NA)</td>
<td>1940s</td>
<td>Approx. 32,000</td>
<td>all 50 States</td>
</tr>
<tr>
<td>Cocaine Anonymous (CA)</td>
<td>1982</td>
<td>Approx. 2000 groups</td>
<td>most States; 6 online meetings at <a href="http://www.ca-online.org">www.ca-online.org</a></td>
</tr>
<tr>
<td>Methadone Anonymous (MA)</td>
<td>1990s</td>
<td>Approx. 100 groups</td>
<td>25 States; online meetings at <a href="http://methadone-anonymous.org/chat.html">http://methadone-anonymous.org/chat.html</a></td>
</tr>
<tr>
<td>Marijuana Anonymous (MA)</td>
<td>1989</td>
<td>Approx. 200 groups</td>
<td>24 States; online meetings at <a href="http://www.ma-online.org">www.ma-online.org</a></td>
</tr>
<tr>
<td>Rational Recovery (RR)</td>
<td>1988</td>
<td>No group meetings or mutual helping; emphasis is on <em>individual</em> control and responsibility</td>
<td></td>
</tr>
<tr>
<td>Self-Management and Recovery Training</td>
<td>1994</td>
<td>Approx. 3,000 groups</td>
<td>40 States; 19 online meetings at <a href="http://www.smartrecovery.org/meetings/olschedule.htm">www.smartrecovery.org/meetings/olschedule.htm</a></td>
</tr>
<tr>
<td>Secular Organization for Sobriety, a.k.a.</td>
<td>1986</td>
<td>Approx. 500 groups</td>
<td>all 50 States; Online chat at <a href="http://www.sossobriety.org/sos/chat.htm">www.sossobriety.org/sos/chat.htm</a></td>
</tr>
<tr>
<td>Save Ourselves (SOS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women for Sobriety (WFS)</td>
<td>1976</td>
<td>150-300 groups</td>
<td>Online meetings at <a href="http://groups.msn.com/">http://groups.msn.com/</a> WomenforSobriety</td>
</tr>
<tr>
<td>Moderation Management (MM)</td>
<td>1994</td>
<td>Approx.18 face-to-face meetings</td>
<td>12 States; Most meetings are online at <a href="http://www.angelfire.com/trek/mmchat/">www.angelfire.com/trek/mmchat/</a>;</td>
</tr>
</tbody>
</table>

Source: Kelly & Yeterian, 2015
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 and …
Cochrane Systematic Review on AA/TSF (2020)

- Kelly, JF
- Humphreys, K
- Ferri, M

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

Kelly JF, Humphreys K, Ferri M.


DOI: 10.1002/14651858.CD012880.pub2.
TSF Compared to Different Theoretical Orientation Treatments (RCTs all Manualized)
TSF Compared to Different Theoretical Orientation Treatments (RCTs all Manualized)

% COMPLETELY ABSTINENT

<table>
<thead>
<tr>
<th>STUDY</th>
<th>TSF</th>
<th>COMP TX 1</th>
<th>COMP TX 2</th>
<th>Relative Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis 2002*</td>
<td>36</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litt 2007*</td>
<td>41</td>
<td>22</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Litt 2009*</td>
<td>45</td>
<td>30</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Litt 2016</td>
<td>32</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATCH 1997a*</td>
<td>24</td>
<td>15</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>MATCH 1998a*</td>
<td>36</td>
<td>24</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>MATCH 1998b*</td>
<td>25</td>
<td>24</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Kelly 2017</td>
<td>33</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McCrady 1999a</td>
<td>36</td>
<td>22.7</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>
Economic Studies

Healthcare Cost Savings

• 3/4 included studies in this category (n reports = 4/5; found sig. health care cost saving in favor of the AA/TSF condition.

• Economic analyses found benefits in favor of AA/TSF relative to outpatient treatment, and CBT interventions.

• Magnitude quite large. In addition to sig. increased abstinence, compared to CBT interventions delivered in residential VA, AA/TSF reduces mental health and substance use related healthcare costs over the next two years by over $10,000 per patient (converted to 2018 U.S. dollars).

• More than 1M people treated for AUD in U.S. annually - reducing their health care costs by this amount would produce an large aggregate economic saving (e.g., >$10 billion in the U.S. alone) as well as improving clinical outcomes.
In Studies the conducted and reported mediational analyses...AA/TSF Causal chain supported...
What about support for causal chain of purported mobc of AA on outcomes?
Empirically-supported MOBCs through which AA confers benefit

- Social network
- Spirituality
- Social Abstinence self-efficacy
- Coping skills
- Negative Affect Abstinence self-efficacy
- Recovery motivation
- Impulsivity
- Craving
Sober Living Environments Peer Run/Self-Governing

- Recovery community centers
- Clinical models of long-term recovery management
- Sober living environments
- Recovery supports in educational settings
- Mutual help organizations
- Peer-based recovery support services
Sober Living Homes

Outcomes for residents in free standing SLHs

SLHs associated with tripling abstinence rates and halving arrest rates

Polcin et al., 2010
Societal Benefits of Oxford Houses

- **Sample**: 150 individuals 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

Oxford Houses are democratic, mutual help–oriented recovery homes for individuals with substance abuse histories. There are more than 1,200 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)*
Oxford House vs. Usual Care

- Sober living had –
- half as many persons using substances across 2 yr follow-up as usual care
- 50% more likely to be employed
- 1/3 re-incarceration rate
Cost-benefit analysis of the Oxford House Model

Benefits and costs associated with mutual-help community-based recovery homes: The Oxford House model

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ABSTRACT

We used data from a randomized controlled study of Oxford House (OH), a self-run, self-supporting recovery home, to conduct a cost-benefit analysis of the program. Following substance abuse treatment, individuals that were assigned to an OH condition (n = 60) were compared to individuals assigned to a usual care condition (n = 51). Economic cost measures were derived from length of stay at an Oxford House residence, and from self-reported measures of ingested and outpatient treatment utilization. Economic benefit measures were derived from self-reported information on monthly income, days participating in illegal activities, binary responses of alcohol and drug use, and incarceration. Results suggest that OH compared quite favorably to usual care: the net benefit of an OH stay was estimated to be roughly $20,000 per person on average. Bootstrapped standard errors suggested that the net benefit was statistically significant. Costs were incrementally higher under OH, but the benefits in terms of reduced illegal activity, incarceration, and substance use substantially outweighed the costs. The positive net benefit for Oxford House is primarily driven by a large difference in illegal activity between OH and usual care participants. Using sensitivity analyses, under more conservative assumptions we still arrived at a net benefit favorable to OH of $17,800 per person.

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Mean per-person societal benefits and costs

Two-year net benefit for Oxford House: **$29,022.00 per person**
The costs associated with Oxford House treatment are returned nearly tenfold in the form of:

- Reduced criminal activity
- Reduced incarceration
- Reduced drug and alcohol use
- Increased earnings from employment
Clinical Models of Long-term Recovery Management

- Mutual help organizations
- Peer-based recovery support services
- Sober living environments
- Clinical models of long-term recovery management
- Recovery community centers
- Recovery supports in educational settings
Recover Management Check-ups (RMC)

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
  • quarterly outcome monitoring (OM) only
  • quarterly OM plus RMC

• Recovery Management Checkups
  • Linkage manager who used motivational interviewing to review the 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 the previous quarter, the 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

Source: Dennis & Scott (2012). Drug and Alcohol Dependence, 121, 10-17
Results 4
Days abstinent

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

*p<.01
Cost-effectiveness analysis of Recovery Management Checkups (RMC)

- **Sample**: 446 patients with substance use disorders residing in Illinois

- **Design**: Cost-effectiveness analysis using RCT data

- **Intervention**: Outcome monitoring (OM) plus RMC vs. OM-only

- **Follow-up**: 4 years

- **Outcome**: Cost per participant, number of days of abstinence, number of substance use-related problems

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

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**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 large central intake unit for substance abuse treatment in Chicago, Illinois, USA. Participants A total of 446 participants who were 18 years old on average, 54% male, and predominantly African American (85%). Measurements Data on the quarterly cost per participant from a previous study of OM and RMC intervention costs. Effectiveness 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-only (P < 0.01). Participants in OM-plus-RMC averaged 1026 days abstinent and had 89 substance use-related problems. OM-only averaged 932 days abstinent and reported 126 substance use-related problems. Mean differences for both effectiveness measures were statistically significant (P < 0.01). The incremental cost-effectiveness ratio for OM-plus-RMC was $23.38 per day abstinent and $59.51 per reduced substance-related problem. When additional costs to society were factored into the analysis, OM-plus-RMC was less costly and more effective than OM-only. Conclusions Recovery Management Checkups is a cost-effective and potentially cost-saving strategy for promoting abstinence and reducing substance use-related problems among chronic substance users.

**Keywords** Chronic substance use disorder, cost-effectiveness analysis, economic evaluation, Recovery Management Checkups.
Costs and Effectiveness Estimates

• Cost on average (per participant) to deliver:
  • OM-plus-RMC: $4,889
  • OM-only: $2,705

• Incremental effectiveness of OM-plus-RMC:
  • 94 additional days abstinent
  • 37 fewer substance use-related problems
Recovery Community Centers

- Mutual help organizations
- Peer-based recovery support services
- Sober living environments
- Clinical models of long-term recovery management
- Recovery community centers
- Recovery supports in educational settings

Anchor
Recovery Community Center
Peer-to-peer support services

Hope for New Hampshire Recovery

Connecticut Community CAR
For Addiction Recovery
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.
New kid on the block: An investigation of the physical, operational, personnel, and service characteristics of recovery community centers in the United States

John F. Kelly¹,², Nilofar Falah-Sohy³, Corrie Vilsaint⁴, Lauren A. Hoffman⁵, Leonard A. Jason⁶, Robert L. Stout⁷, Julie V. Cristello⁸, Bettina B. Hoeppner⁹

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Article Info

Keywords: Recovery community centers
Recovery
Addiction
Support services
Recovery coaching
Addiction Services use disorder

Abstract

Background: Professional treatment and non-professional mutual-help organizations (MHOs) play important roles in mitigating addiction related risk. More recently, a third tier of recovery support services has emerged that are neither treatment nor MHO that encompass an all-inclusive flexible approach combining professionals and volunteers. The most prominent of these is Recovery Community Centers (RCCs). RCCs goal is to provide an attractive central recovery hub facilitating the accrual of recovery capital by providing a variety of services (e.g., recovery coaching; medication assisted treatment (MAT) support, employment/educational linkages). Despite their growth, little is known formally about their structure and function. Greater knowledge would inform the field about their potential clinical and public health utility.

Method: On-site visits (2015-2016) to RCCs across the northeastern U.S. (N = 32) with semi-structured interviews conducted with RCC directors and outreach surveys with staff assessing RCCs’ physicality and locality; operations and budgets. Leadership and staffing; mission, vision, services; outreach; services offered.

Results: Physically and locally: RCCs were mostly in urban/suburban locations (96%) with very good to excellent Wats Access (88%) and accessibility. Ratings of environmental quality indicated neighborhood grounds/buildings were moderate-good attractiveness and quality. Operations: RCCs had been operating for an average of 8.5 years (SD = 9.2, range 1-55 years) with budgets (mostly multi-fledged) ranging from $17,000-$750,000/year, serving anywhere from a dozen to more than two thousand visitors/month. Leadership and staffing: Center directors were mostly female (50%) with primary drug histories of alcohol (62%), cocaine (15%), or opioids (19%). Most, but not all directors (90%) and staff (84%) were in recovery. Memberships: A large proportion of RCC staff were male (61%), White (72%), unemployed (30%), criminal justice system-involved (65%) and reported opioid (25%) or alcohol (23%) as their primary substance. Roughly half were in their first year of recovery (49%), but about 20% had five or more years. Services: RCCs reported a range of services including social recreation (10%), mutual-help (95%), recovery coaching (77%), and employment (89%) and education (63%) assistance. Medication-assisted treatment (MAT) support (49%) and overdose reversal training (57%) were less frequently offered, despite being rated as highly important by staff.

Conclusions: RCCs are easily accessible, attractive, mostly self-funded, recovery support hubs providing an array of services to individuals in various recovery stages. They appear to play a valued role in facilitating the accrual of social, employment, housing, and other recovery capital. This research is needed to understand the relative lack of opioid-specific support and to determine their broader impact in initiating and maintaining recovery and cost-effectiveness.
WHAT DO RCCS OFFER?

- Mental Health Support
- Education Assistance
- Peer-Facilitated Support Groups
- Volunteering
- NARCAN Training
- Technology/Internet
- All recovery meetings
- SMoking Cessation
- Family Support Services
- Employment Assistance
- Health Nutrition Exercise
- Housing Assistance
- Volunteering
- Mutual-Help Meetings
- Financial Services
- Medication-Assisted Treatment Assistance
- Basic Needs Assistance
- Childcare Services
- Expressive Arts
- Education Assistance
- Peer-Facilitated Support Groups
- NARCAN Training
- Legal Assistance
- Recreational Activities
- Recovery Coaching
- Expressive Arts Education Assistance
- Childcare Services
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- Expressive Arts
- Education Assistance
- Housing Assistance
- Peer-Facilitated Support Groups
- Volunteering
- NARCAN Training
- Legal Assistance
- Recreational Activities
- Recovery Coaching
RESULTS

YEARS IN RECOVERY
- Actively using: 20%
- 0-6 months: 31%
- 6 months - 1 year: 17%
- 1-5 years: 5%
- 5+ years: 5%

PRIMARY SUBSTANCE
- Alcohol: 41%
- Opioids: 2%
- Amphetamines/Meth: 4%
- Cannabis: 2%
- Cocaine/Crack: 1%
- Other: 5%
- No drug problem: 9%
Fig. 5. Locally Weighted Scatterplot Smoothing (LOWESS) analysis of recovery indices by years since problem resolution stratified by primary substance.
One-Stop Shopping for Recovery: An Investigation of Participant Characteristics and Benefits Derived From U.S. Recovery Community Centers

John F. Kelly, Robert L. Stout, Leonard A. Jason, Nilofar Fallah-Sohy, Lauren A. Hoffman, and Bettina B. Hoepner

Background: Recovery community centers (RCCs) are the “new kid on the block” in providing addiction recovery services, adding a third tier to the 2 existing tiers of formal treatment and mutual-help organizations (MHOs). RCCs are intended to be recovery hubs facilitating “one-stop shopping” in the accrual of recovery capital (e.g., recovery coaching; employment/educational linkages). Despite their growth, little is known about who uses RCCs, what they use, and how use relates to improvements in functioning and quality of life. Greater knowledge would inform the field about RCCs’ potential clinical and public health utility.

Methods: Online survey conducted with participants (N = 336) attending RCCs (k = 31) in the northeastern United States. Substance use history, services used, and derived benefits (e.g., quality of life) were assessed. Systematic regression modeling tested a priori theorized relationships among variables.

Results: RCC members (n = 336) were on average 41.1 ± 12.4 years of age, 50% female, predominantly White (78.6%), with high school or lower education (48.8%), and limited income (45.2% < $10,000 past-year household income). Most had either a primary opioid (32.7%) or alcohol (26.8%) problem. Just under half (48.5%) reported a lifetime psychiatric diagnosis. Participants had been attending RCCs for 2.6 ± 3.4 years, with many attending <1 year (35.4%). Most commonly used aspects were the socially oriented mutual-help peer groups and volunteering, but technological assistance and employment assistance were also common. Conceptual model testing found RCCs associated with increased recovery capital, but not social support; both of these theorized proximal outcomes, however, were related to improvements in psychological distress, self-esteem, and quality of life.

Conclusions: RCCs are utilized by an array of individuals with few resources and primary opioid or alcohol histories. Whereas strong social supportive elements were common and highly rated, RCCs appear to play a more unique role not provided either by formal treatment or by MHOs in facilitating the acquisition of recovery capital and thereby enhancing functioning and quality of life.

Key Words: Recovery Community Centers, Recovery, Addiction, Support Services, Recovery Coaching, Addiction, Substance Use Disorder.

Professional treatment services often play a vital role in addressing substance use disorders in the United States and around the world. Such clinical services can provide life-saving medically managed detoxification and stabilization as well as deliver medications and psychosocial interventions that can alleviate cravings and help prevent relapse. Extending the framework and benefits of these professional treatment efforts, peer-led mutual-help organizations (MHOs), such as Alcoholics Anonymous (AA), Narcotics Anonymous (NA), SMART Recovery, and many others are commonly used to provide additional long-term free recovery support over time in the communities in which people live (Bog et al., 2017; Kelly, 2017; Kelly et al., 2017a). Adding to these resources in recent years has been a new dimension of recovery support services that are neither professional treatment nor MHOs. These new services (e.g., recovery community centers [RCCs], recovery residences, recovery coaching, recovery high schools, and collegiate recovery programs; Kelly et al., in press; White et al., 2012, 2012) combine voluntary, peer-led initiatives, with professional activities, and are intended to provide flexible community-based options to address the psychosocial barriers to sustained remission (White et al., 2012, 2012).

RCCs are one of the most common of these new additions to recovery support infrastructure and are growing rapidly...
Whereas strong social supportive elements were common and highly rated, RCCs appear to play a more unique role not provided either by formal treatment or by MHOs in facilitating the acquisition of recovery capital and thereby enhancing functioning and quality of life.
Where have we come from? Where are we now? Where are we going? 50 years of Addiction Science, Practice, and Policy:

What is “recovery” and why is everyone talking about it?

Theory of addiction recovery: a biopsychosocial perspective

Services for Attaining and sustaining addiction remission and recovery

State of the Science and future directions
<table>
<thead>
<tr>
<th>Service</th>
<th>Quantity</th>
<th>Quality</th>
<th>Support for RS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mutual help organizations</td>
<td>Large</td>
<td>Strong</td>
<td>Strong</td>
</tr>
<tr>
<td>2. Clinical models of long term recovery management</td>
<td>Large</td>
<td>Strong</td>
<td>Moderate-Strong</td>
</tr>
<tr>
<td>3. Peer-based recovery support services</td>
<td>Small-medium</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>4. Recovery Community Centers</td>
<td>Small</td>
<td>Weak-Moderate</td>
<td>Weak-Moderate</td>
</tr>
<tr>
<td>5. Recovery Residences</td>
<td>Medium</td>
<td>Moderate-Strong</td>
<td>Moderate-Strong</td>
</tr>
<tr>
<td>6. Education-Based Recovery Supports</td>
<td>Small</td>
<td>Weak-Moderate</td>
<td>Weak-Moderate</td>
</tr>
</tbody>
</table>
Summary: Key Points

- Past 50 years since declaration of “War on Drugs” a lot learned on etiology, epidemiology, typology, prevention and acute care treatment models for addiction
- New recognition of a need for a science on how individuals achieve and sustain full remission and long-term stable “recovery”
- Recovery often used to describe both a personal growth process as well as an outcome
- Recovery often used to imply not just surviving but thriving in spite of having suffered addiction – often because of it, invoking notion of resilience
- Recovery concept given rise to new national and international social movements, and an increasingly serious science on understanding recovery and factors that facilitate and drive it
- Recovery theories of stable remission and long-term relapse are lacking; but existing conceptual models can be drawn upon to provide reasonable testable hypotheses
- Both addiction and recovery can be viewed comprised of two major factors: degree of clinical pathology and availability of internal and external resources ("recovery capital"; aks “social determinants of health/recovery”)
- An array of community-based recovery services and treatment-recovery service systems have emerged and are growing across the U.S. that have varying levels of supportive evidence
- A new research agenda is emerging to more comprehensively address the needs of individuals and their families who suffer from serious alcohol/drug problems
Sponsoring Organizations

RECOVERY RESEARCH INSTITUTE

Opioid Response Network

SAMHSA Substance Abuse and Mental Health Services Administration
• The SAMHSA-funded *Opioid Response Network (ORN)* assists states, organizations and individuals by providing the resources and technical assistance they need locally to address the opioid crisis and stimulant use.

✧ Technical assistance is available to support the evidence-based prevention, treatment and recovery of opioid use disorders and stimulant use disorders.

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Working With Communities

- The *Opioid Response Network (ORN)* provides local, experienced consultants in prevention, treatment and recovery to communities and organizations to help address this opioid crisis and stimulant use.

- *ORN* accepts requests for education and training.

- Each state/territory has a designated team, led by a regional Technology Transfer Specialist (TTS), who is an expert in implementing evidence-based practices.
Contact the Opioid Response Network

✧ To ask questions or submit a request for technical assistance:

- Visit www.OpioidResponseNetwork.org
- Email orn@aaap.org
- Call 401-270-5900