Recovery processes and milestones: Science-Informed Conceptualizations

John F. Kelly, Ph.D. ABPP
Founder and Director of MGH Recovery Research Institute

Elizabeth R. Spallin
Professor of Psychiatry
Harvard Medical School
50 years of criminal justice, treatment, and public health, approaches
Clinical Course of Addiction and Remission

- 4-5 yrs (Recovery Priming)
- 8 yrs (Recovery Mentoring)
- 5 yrs (Recovery Monitoring)

Can we speed this up?
Emergency
Extinguish
Prevent
Rebuild
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 DYNAMIC PROCESS

RESILIENCE FACTORS

Biology/Genes
- Genetics
- Gender
- Other Mental Illness

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

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

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

Recovery
Four main reasons why people **start** to use alcohol/drugs

- **Feel good**
- **Feel better**
- **Do better**
- **Others are doing it**
Four main reasons why people **stop** using alcohol/drugs

<table>
<thead>
<tr>
<th>Feel good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel better</td>
</tr>
<tr>
<td>Do better</td>
</tr>
<tr>
<td>Others <strong>not</strong> doing it</td>
</tr>
</tbody>
</table>
Recovery

Mutual help organizations

Coaching

Residences

Physical and Recreational Activity Organizations

Community Centers

Programming education, employment settings

Hugely increased variety of recovery support options…

Recovery

Recovery Mutual help organizations

Recovery Coaching

Recovery Residences

Physical and Recreational Activity Recovery Organizations

Recovery Community Centers

Recovery Programming education, employment settings

Women for Sobriety

National Alliance for Recovery Residences

NARR

Anchor Recovery Community Center

The Luckiest Club

PHOENIX MULTISPORT

MEDITATION MANAGEMENT

MODERATION MANAGEMENT
Do Fitness Centers Keep people fit?

• Of course!
• If you go -work out regularly
• Perennial challenge is engaging and retaining people in some kind of ongoing exercise regimen...
• Fitness Centers thus provide not just one, but array, of different classes, spaces, equipment, pools, and courts, so people can find something appealing...
Do Recovery Support Service Organizations Keep people fit for recovery?

• Of course!

• If you go and if you work the recovery program and build elements in to your lifestyle (like exercise)

• The perennial challenge is engaging and retaining people in some kind of ongoing recovery support service ...

• Recovery support services, however, have been largely historically limited to one variety (12-step) severely limiting options to engage and retain people in an ongoing recovery support service that can help mitigate relapse risk

• This is tantamount to a fitness center having ONLY a weight room, or ONLY a pool etc...
“Quitting is easy, I’ve done it dozens of times”

- Mark Twain
Challenges of Initial and Early Recovery

- Increased sensitivity to stress
- Decreased capacity to experience normal levels of reward
How Organisms Recover

Photosynthesis

Psychosynthesis

Kelly JF (2022)
Recovery Milestones

- Initial 0-3m
- Early 4-12m
- Sustained 1-5yrs
- Stable 5+yrs

What do we know about recovery milestones and trajectories?
Relevant to inform answers to Questions regarding Treatment and Recovery Support Services...

- Who needs what type of service?
- When in their recovery?
- For what duration?
- At what intensity?
40-Year Time Frame of Recovery Trajectories

Recovery Indices by Years Since Problem Resolution

- Recovery Index Z-score
- Years Since AOD Problem Resolved

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

National Recovery Study (NRS) N=2,002

Kelly et al, 2018; Beyond Abstinence; Alcoholism: Clinical Experimental Research
Changes in Recovery Capital and Quality of life Among Different Primary Substance Groups in first 5 yrs of Recovery

Fig. 5. Locally Weighted Scatterplot Smoothing (LOWESS) analysis of recovery indices by years since problem resolution stratified by primary substance.
Changes in Quality of life, Distress, Happiness Among Different Racial/Ethnic Groups in first 5 yrs of Recovery

Kelly et al, 2018; Beyond Abstinence; Alcoholism: Clinical Experimental Research
Sexual Minority vs Heterosexual Status and Changes in Functional and Well-Being Indices - 40 yr. temporal horizon

Haik et al. 2022
2-yr Year Temporal Horizon of Recovery Trajectories

Recovery Indices by Years Since Problem Resolution

Years 0-5

Years 0-2

Recovery Index Z-score

0 -0.2 -0.4

0 1 2 3 4 5

Years Since AOD Problem Resolved

Recovery Index Z-score

0 -0.1 -0.2 -0.3

0 0.5 1 1.5 2

Years Since AOD Problem Resolved

Kelly et al, 2018; Beyond Abstinence; Alcoholism: Clinical Experimental Research
Recovery Curve

Preliminary Data-Based Recovery Milestones and Tasks...

- Convalescence (Fire is out; "calm")
- Assessment and Appraisal (paradoxical distress)
- Dawning of Reality (Smoke clears; "alarm")
- Conservation & Growth (corrective, preventative, risk-based, maintenance)
- Reconstruction (building materials, building permits)
- Industrial Resolution

Based on Kelly et al, 2018; Beyond Abstinence; Alcoholism: Clinical Experimental Research
C.H.I.M.E...

CONNECTION  HOPE AND OPTIMISM  POSITIVE SOCIAL IDENTITY  MEANING AND PURPOSE  EMPOWERMENT

Leamy et al, 2011
# Dynamic Bio-Psycho-Social Model of SUD Recovery

<table>
<thead>
<tr>
<th>Recovery Stage</th>
<th>Description</th>
<th>Dimension</th>
<th>Predominant Stage Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Biological</td>
<td>Psychological</td>
</tr>
<tr>
<td>Initial (0-3m)</td>
<td>Convalescence</td>
<td>Safety</td>
<td>Relief; liberation; hope; subjective calm</td>
</tr>
<tr>
<td></td>
<td>Treatment; medical management/monitoring; oversight; social support/attention; <em>(Fire is out)</em></td>
<td>Metabolic stabilization Acute withdrawal management</td>
<td>Hope and optimism</td>
</tr>
<tr>
<td>Early (4-12m)</td>
<td>Appraisal</td>
<td>Post-acute withdrawal management; Physical Activity/Nutrition/Sleep <em>(S.A.N.E.)</em></td>
<td>Subjective alarm Paradoxical distress; emotion regulation; reduced impulsivity/improved delay discounting; Social (re)integration</td>
</tr>
<tr>
<td></td>
<td>Dawning of Reality; Industrial resolution; “look what I have to clear up/Look what I have to make up”; <em>(Smoke Clears)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustained (1-5yrs)</td>
<td>Reconstruction</td>
<td>Post-acute withdrawal management; emerging physical resilience</td>
<td>Self-efficacy Competence Effort/industry</td>
</tr>
<tr>
<td></td>
<td>Re-Building Building materials/permit; <em>fireproofing</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stable (5+yrs)</td>
<td>Conservation and Growth</td>
<td>Increased physical resilience; robustness</td>
<td>Cognitive vigilance; Gratitude; personal growth</td>
</tr>
<tr>
<td></td>
<td>Maintenance (corrective, preventative, risk-based)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary

Past 50 yrs - from “War on Drugs” to “War on the War on Drugs” - shifting emphasis from criminal justice to public health approaches...

Birth of NIH addiction institutes (NIDA, NIAAA) have brought new insights and paradigm shifts including recognition of long clinical course to remission...

Enhanced awareness of need to mitigate environmental stressors and biobehavioral stress to shorten course to stable remission

Broad array of recovery support services emerged and grown with increasing empirical scrutiny and growing support

Recovery research is revealing dynamic and intersectional nature of recovery process - can help inform who needs what services, when, for how long, and at what intensity