Defining and Operationalizing Recovery from Substance Use Disorders

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Workshop on Integrating New Measures of Recovery from Substance Use or Mental Disorder Into SAMHSA’S Data Collection Programs
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Topics

- Background and overview
- How has recovery from substance use disorders (SUD) been conceptualized and measured in research?
- How do individuals define the meaning of “recovery”? 
Historical Perspectives

Detail from the *Taylor Map of New York* (1879)
How has the concept of “Recovery” from SUD evolved?

- The concept of *recovery* from alcohol problems (i.e., *intemperance*) dates to the emergence of mutual self-help organizations within the context of 19th century temperance movements:
  - Washingtonian Temperance Society (1840): non-sectarian, personal testimonials, temperance pledge
  - Post Civil War evangelical temperance movements: gospel rescue missions, prayer meetings, focus on sinful nature
- 1935: *Alcohol Anonymous* (AA) founded - begins mass movement of mutual support groups for recovery
- *Recovery* has broadened to have more general usage in society.

Addiction and Recovery
The Jellinek Curve

Faces & Voices of SUD Recovery

Over 23 million Americans are in recovery from addiction to alcohol & other drugs.

NACoA Awareness Week
Join the national – and international – awareness campaign to break the painful silence and offer hope to the vulnerable children and teenagers impacted by parents who are struggling with addiction.

Blog
New Recovery Movement Basics
January 4, 2016
Definition: The New Recovery Advocacy Movement (NRAM) is a social movement led by people in addiction recovery and their allies aimed at promoting enhanced hope for recovery, expanded access to treatment, and improved policies.

Upcoming Trainings & Events
7th Annual Helen Cordes Award Dinner

http://www.facesandvoicesofrecovery.org/
Launched in September 2011, the *International Quit & Recovery Registry* seeks to understand what allows people to succeed in overcoming addiction. Led by Warren Bickel, PhD, director of the Addiction Recovery Research Center at Virginia Tech Carilion Research Institute, the registry taps the insights and experiences of people who are in recovery from an addiction.

[https://quitandrecovery.org/](https://quitandrecovery.org/)
Scientific interest in SUD recovery has increased

- Google Scholar between 1959 and 2012 shows an exponential increase in the number of articles about substance use with “recovery” in the title in the past decade

Growth in number of articles about recovery

How has recovery from SUD been conceptualized and measured in research?

- Developmental/life course approach
  - Age-related differences
  - Maturational process
- Clinical indicators of remission from SUD
  - Symptom remission
  - Covariates of recovery
- Behavioral indicators of SUD recovery
  - Focus on use/abstinence
  - Multi-component indicators
  - Cross-sectional status vs. person-centered trajectories
- What is Recovery? Study
Developmental/Life Course Approach to Understanding Recovery from SUD
Developmental/life course approach

Source: U.S. National Household Survey on Drug Use and Health, 2001
Related constructs in developmental perspective

- **Natural recovery**: Most people in the general population who have a SUD go into remission without any formal intervention.

- **Turning points**: A life event, experience, or role transition that results in changes in the direction of a pathway or persistent trajectory over the long-term (e.g., marriage, childbirth, employment, incarceration, illness).

- **Recovery capital**: Refers to assets or resources that individuals with substance use problems can use to cope with stressors and sustain recovery; e.g., having access to treatment services and supportive family, friends, and social networks, including 12-step groups.

“Maturing Out” of Narcotic Addiction

- Study used records of narcotics addicts (N=45,391) reported to the Federal Bureau of Narcotics from federal, state, and local law enforcement and health agencies in the U.S. beginning in 1955.

- Examined the extent to which individuals “were considered to be inactive” by the end of 1960.

- 16% were classified as inactive
  - They ranged in age from 18 to 76 years.
  - Average age of inactivity was 35.12
  - Average duration of addiction was 8.6 years; ranged from 5 - 56 years

“Maturing Out” of Narcotic Addiction

- Factors that influenced cessation:
  - external circumstances
  - relationships jeopardized by drug use
  - weariness
  - personality and insight
  - incapacitating physical problems

- Interpreted the findings to support that maturation out of addiction occur:
  - as a reflection of their life cycle
  - as a function of the length of their addiction

Maddux & Desmond: Re-examination of the “maturing out” hypothesis

Subjects were 248 opioid users in San Antonio who were treated at the PHS Hospital in Fort Worth from 1964-1967; their status was recorded through 1975.

<table>
<thead>
<tr>
<th>Five conditions that “probably facilitated” recovery</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocation away from usual source of drugs</td>
<td>19</td>
<td>36</td>
</tr>
<tr>
<td>Evangelical religious participation</td>
<td>13</td>
<td>25</td>
</tr>
<tr>
<td>Employment with drug abuse treatment agency</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Probation or parole for 1 year or more</td>
<td>22</td>
<td>42</td>
</tr>
<tr>
<td>Alcohol substitution</td>
<td>23</td>
<td>43</td>
</tr>
</tbody>
</table>

Opioid drug use status of 248 subjects in July of each year, 1966-1975

# George Vaillant’s Longitudinal Studies of Male Heroin Addicts and Alcoholics

<table>
<thead>
<tr>
<th>Study sample: Alcoholics</th>
<th>Study sample: Heroin users</th>
</tr>
</thead>
<tbody>
<tr>
<td>268 Harvard undergraduates and 456 non-delinquent, socially disadvantaged Boston adolescents</td>
<td>100 men admitted to the US Public Health Service Hospital in Lexington, KY between 1952-1953</td>
</tr>
<tr>
<td>Participants were followed from age 20 to age 70–80 years</td>
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</tbody>
</table>

George Vaillant’s longitudinal studies of male heroin addicts and alcoholics

By age 70:
- 21% - 32% of surviving alcoholics were abstinent; 11% - 12% were still abusing alcohol
- 35% of surviving heroin users had achieved stable abstinence (≥ 3 yrs) and 25% were still using

In both samples, “freedom from relapse” was associated with:
- community compulsory supervision
- a substitute dependence
- new relationships
- inspirational group membership (religion or AA)

Stable “pre-morbid” adjustment, especially employment, was most predictive of outcomes
Clinical Indicators of Recovery from SUD: Focus on Symptom Remission

DSM-V Substance Use Disorder

Early remission: lifetime SUD; at least 3 but less than 12 months with no symptoms (except craving)

Sustained remission: lifetime SUD; at least 12 months with no symptoms (except craving)
Remission vs. Recovery in NESARC

Among those with lifetime AUD, past year-status:

- **Still dependent**: had ≥ 3 positive criteria for alcohol dependence
- **Partial remission**: did not meet the criteria for alcohol dependence, but reported > 1 symptoms of either alcohol abuse or dependence
- **Asymptomatic risk drinker**: past-year risk drinker, but no symptoms of either abuse or dependence:
  - **Men**: drank > 14 drinks/week, on average, or drank ≥ 5 drinks in a single day ≥ 1 time in past year.
  - **Women**: drank > 7 drinks/week, on average, or drank > 4 drinks in a single day ≥ 1 time in past year
- **Low-risk drinker**: non-risk drinker with no symptoms of either abuse or dependence
- **Abstainer**: did not consume any alcohol

Correlates of recovery from alcohol dependence in NESARC

**Abstinent Recovery**
- Black, Asian, Hispanic (vs. White)
- Child <1 year old in household
- Attends religious services weekly
- Sought help that included 12-step participation
- Marginal:
  - Divorced or separated
  - Employed with job problems
  - Number of AUD symptoms

**Non-Abstinent Recovery**
- Never married (-)
- Unemployed or job problems (PY)
- Attends religious services weekly
- Smoking (-)
- Volume of alcohol consumed (-)
- Marginal:
  - Divorced or separated
  - Child <1 year old in household
  - Past-year DUD (-)
  - Has 1 medical problem (-); 2 problems (+)

### Age-related correlates of drinking cessation (over 3-year follow-up) among regular drinkers in NESARC

<table>
<thead>
<tr>
<th>Younger (18 - 54)</th>
<th>Older (55+)</th>
<th>Non-age Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL pregnant/has infant -</td>
<td>Family income &gt; $70,000 -</td>
<td>College educated (vs. HS) -</td>
</tr>
<tr>
<td>Nicotine or DUD -</td>
<td>Volume of alcohol intake -</td>
<td>Black or Hispanic (vs. White) +</td>
</tr>
<tr>
<td>Personality disorder (cluster A) -</td>
<td>Male +</td>
<td>Smoking cessation +</td>
</tr>
<tr>
<td>Liver disease +</td>
<td>Asian ethnicity (vs. White) +</td>
<td>Months since last drink +</td>
</tr>
<tr>
<td>Incident retirement +</td>
<td>Mood disorder +</td>
<td></td>
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<tr>
<td></td>
<td>Onset of CVD +</td>
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Refining the Maturing Out Theory: Do rates of persistence change with age?

- Decomposed DUD status at follow-up by age
- Age effect is due to decreases in new onset and recurrence of DUD, whereas persistence is relatively stable across age
- Role transitions co-varied with changes in status

Behavioral Indicators of Recovery from SUD in Clinical & Cohort Studies: Focus on Abstinence and Psychosocial Functioning
Kaiser cohort study: Multi-component definition recovery from SUD

Study Sample:
Patients (N = 991) treated for SUD in a managed care system; Follow-up data were obtained from patients at 1, 5, 7 and 9 years following intake.

Remission was defined as abstinence in past 30 days or non-problematic substance use, which was defined as:

- drinking ≤4 times in the previous month
- not having ≥5 drinks on any given day
- not using marijuana more than once
- not using any drug other than alcohol or marijuana
- not having suicidal ideation, violent behavior or serious conflict with friends, family or colleagues

Latent measure of SUD recovery in Pathways Study (N=1,008)

33-year Follow-up Study of Civil Addict Program (CAP) Sample

Original study sample:
581 men with a history of heroin dependence originally in the California Civil Addict Program in 1962-64, with 3 follow-up waves

Characteristics: Ave age = 57 years at most recent follow-up wave; white (36.8%), Hispanic (56.2%), African-American (7.0%)

Followed for more than 30 years in 3 waves; deaths were documented with records from CDC-National Death Index

MV analyses used predictors from prior waves to model recovery at most recent wave;
Stable recovery: at least 5 years of sustained abstinence from heroin (43%)

Natural History of Narcotics Addiction Among CAP Sample (N=581)


Comparisons between individuals with at least 5 years of abstinence vs. others

- Recovery group (Mean = 19±9 years abstinence) and non-recovery group did not differ in substance use initiation, conduct problems, or family/school problems prior to age 15.
- Both groups had multiple treatment episodes (primarily methadone treatment) and self-help participation.
- In MV models, stable recovery at most recent follow-up was predicted by:
  - Hispanic vs. non-Hispanic (-)
  - Self-efficacy and coping skills (+)
  - Psychological distress (-)

30-Year follow-up study of men and women sampled from methadone treatment in California

Original study sample:
Participants were sampled from methadone maintenance clinics in 6 counties in Central & Southern California and interviewed in 1978-81

At follow-up in 2005-08: 47% verified as deceased;
71% of those still living were interviewed (N = 343);
Average age: 58.3 for males, 55.0 for females

Trajectory group analyses generated 4 clusters of individuals with similar patterns of heroin use over time (person-centered analysis), controlling for time incarcerated;
Bivariate comparisons across 4 trajectory groups, including patterns of other substance use

Trajectory group outcomes over 30-year follow-up study

30-Year Heroin Use Trajectories in a California Treatment-Based Cohort

- **Rapid Decrease** (22%*): 60% women; less school problems, CD, ASP; most % time using alcohol & meth
- **Moderate Decrease** (47%*): 46% women
- **Gradual Decrease** (64%*): 39% women; more ASP, most % time incarcerated
- **No Decrease** (84%*): 46% women; most % time MMT & using cocaine; youngest at 1st heroin use & arrest

N = 341; observed use based on joint heroin and AOD use trajectory models; odds of heroin use calculated per year beginning with year of heroin use initiation, excluding periods institutionalized; probability of group membership: all > 0.95; *percentage of time using heroin; Grella & Lovinger, 2011
Independent correlates of 5 or more years of heroin abstinence:

- Female gender (OR = 1.73)
- Not being currently enrolled in a treatment program (OR = 2.16)
- Fewer discrete treatment episodes across the follow-up (OR = 0.90)

How do Individuals Define The Meaning of “Recovery”: What is Recovery? Study
What Is Recovery (WIR) Study

- The “What is Recovery?” study aimed to empirically identify the domains and specific elements of recovery as experienced by persons in recovery from diverse pathways.

- An Internet-based survey was completed by 9,341 individuals who identified themselves variously as:
  - In recovery (75%)
  - Recovered (13%)
  - In medication-assisted recovery (3%)
  - Used to have a problem with alcohol and drugs (but no longer do) (9%)

What Is Recovery (WIR) Study

- Individuals rated 47 items as to how much each: “belongs in a definition of recovery as you have experienced it.”

- Factor analyses used to statistically reduce and group the elements into 4 factors (35 elements):
  - Abstinence
  - Spirituality
  - Essentials of recovery
  - Enhanced recovery
What Is Recovery? (WIR) Study

WIR Study sample (N = 9,328)

Latent class analysis derived five groups based on their adherence to items in each of the four factors

- **12-step Traditionalists** (52.7%)
- **12-step Enthusiasts** (21.6%)
- **Secular Class** (10.5%)
- **Self-reliant Class** (11.1%)
- **Atypical Class** (4.1%)

Sample Characteristics:

- 98% met DSM-IV criteria for dependence
- 59% endorsed alcohol as their primary substance; the remainder cited other drugs
- Nearly all (96%) had attended treatment, 12-step and/or other recovery groups
- 54% were female, 82% over age 35, 80% had a some college/college degree, and most (88%) were white (88%)
- A follow-up study with a sub-sample found relative stability in adherence to beliefs about recovery over approximately 3 years

What Is Recovery? (WIR) Study

- The five groups differed in their beliefs and behaviors on: abstinence, spirituality, 12-step participation, and social interactions.

- **12-step Traditionalists (57.7%)**: Strongly abstinence-oriented, with most indicating no alcohol use (87%), no use of non-prescribed drugs (72%), and no use of non-prescribed drugs (84%); high treatment and 12-step participation; strongly endorsed spirituality elements and identified as “in recovery.”

- **12-step Enthusiasts (21.6%)**: Mainly differed from the Traditionalists in less strongly endorsing: no use of non-prescribed drugs.
What Is Recovery? (WIR) Study

- Self-reliant Class (11.1%): Moderately endorsed abstinence from alcohol and illicit drugs and no abuse of prescription drugs; lower endorsements to items pertaining to social interactions, e.g., learning how to get support, helping others, giving back, being able to have relationships.

- Secular Class (10.5%): less endorsement of spirituality, more tolerant of non-abstinence, younger, fewer years in recovery, more often identified as used to have a problem, higher rates of using alcohol, and lower rates of 12-step participation.

- Atypical Class (4.1%): Less endorsement of spirituality and abstinence; high intolerance for recovery being religious in nature; strongly endorsed being able to enjoy life as fundamental to recovery.
Implications for Measuring Recovery

- **Time frame**: recovery is both a process of change and point-in-time status
- **Study design**: longitudinal vs. cross-sectional
- **Sampling**: general population probability surveys vs. clinical/targeted samples
- **Criteria**: abstinence as critical component vs. multi-component measure
- **Abstinence/use**: strict adherence vs. more tolerant definitions
- **Perspective of the individual**: does self-definition matter?