12-step participation among polysubstance users

Longitudinal patterns, effectiveness, and (some) mechanisms of action

Alexandre B. Laudet, Ph.D

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The bulk of 12-step research thus far has focused on alcohol dependent persons, most of whom were recruited in treatment or were treatment seekers.

Millions of 12-step members worldwide continue attending meetings, some for multiple years after achieving abstinence, yet the effectiveness of this practice has not been empirically examined.

Most of this presentation centers on assessing the effectiveness of 12-step attendance and involvement in sustaining abstinence from polysubstance use.

We will also briefly address some mechanisms of action, patterns of attendance and one possible strategy to enhance affiliation.
The Pathways project: Summary

- A five year NIH-funded investigation of factors associated with sustained abstinence over time

- Media recruited formerly substance dependent persons in NYC (N= 354)

- Eligibility criteria: (1) self-reported abstinence of one month or longer; and (2) not currently in residential treatment

- Naturalistic prospective design: four yearly in-person interviews

- Computer-assisted semi-structured interviews

- Biological corroboration of self-reported drug use (hair or saliva) @ follow-ups (concordance 84-87%)

http://www.ndri.org/ctrs/cstar/pathways.asp
The Pathways Sample: Summary

- Primarily members of inner-city ethnic, under-served minorities
- Long & severe history of (primarily) crack and/or heroin dependence
- Almost all polysubstance users
- Abstinent from one month to 10+ years at baseline
- 31% HepC+ and 24% HIV+
- Almost all have used formal addiction treatment services and 12-step fellowships
Pathways dataset: Summary (N = 354)

- Baseline (N = 354): 92% retention
- One year follow-up (N = 317): 90%
- Two-year follow-up (N = 308): 84%
- Full dataset (N = 289)
Pathways participants were classified by baseline abstinence duration

- Under 6 mos., Drug abstinent: 27%
- 6 to 18 mos.: 26%
- 18 to 36 mos.: 20%
- Three+ yrs: 27%
12-Step as Aftercare project: Summary

- A four-year NIH-funded investigation of predictors and effectiveness of post-treatment 12-step affiliation among polysubstance users in NYC.

- 314 consecutive admissions recruited at two large publicly funded outpatient programs.

- 36 clients remained in treatment < 30 days and were dropped from the study.

- 250 clients re-interviewed at treatment end (90% re-contact) who constitute the prospective study cohort.

- Follow-up interviews 3-, 6- and 12-months post treatment end.

- Computer-assisted semi-structured interviews.

- Full dataset on 219 participants (87.6% retention).
ACT ONE: Does it work?
Measures
Measures of 12-step affiliation

In all our studies we operationalize 12-step affiliation thus:

- **Meeting Attendance:** Number of AA + NA meetings attended during the target period (looked at Cocaine Anonymous, few if any attend)

- **12-step Involvement:** Sum score of participation in nine 12-step suggested activities:
  - Having a sponsor
  - Sponsoring someone
  - Reading recovery literature
  - Having a home group
  - Considering oneself a 12-step member
  - Doing service
  - Working the steps
  - Contacting 12-step members outside of meetings; and
  - Socializing with other members outside of meetings.
Measures of substance use outcomes

In all our studies we operationalize abstinence as *No self-reported use of drugs or alcohol during the target period*, obtained as follows:

- ‘Ever use’ 13 ASI substances?
- For each ‘ever used’ once of more: Last date of use?
- Compute abstinence duration for each substance
- Participant’s abstinence period = Shortest period of any substance

For analyses requiring dichotomous variable:
- IF shortest abstinent period > target study period
- THEN participants’ abstinence status = YES

For multiple periods: continuous abstinence =
- [abstinent past year @ F1 & abstinent past year @ F2 etc…]
Effectiveness of Twelve-step fellowships

Most research has examined single substance outcome - e.g., alcohol, cocaine
Twelve-step fellowships foster abstinence from polysubstance use.
Sustained abstinence at F1 as a function of baseline level of 12-step attendance and affiliation*

* all p < .05
Role of continuous 12-step attendance and involvement over 3 years on odds of sustained remission at F2*

* all p < .05
Sustained abstinence over three years at F3 as a function of continuous 12-step attendance*

* all p < .01
ACT TWO: How does it work?
Twelve-step fellowships: mechanisms of action [example]
Twelve-step participation enhances Life Meaning and Purpose
Life meaning and recovery

Meaning provides essential context to understand and successfully cope with life’s difficulties.

Qualitative work suggests that many who have found purpose in life - a reason to ‘get up in the morning,’ a reason to sustain recovery in challenging times - do not necessarily consider themselves spiritual.

I need to have a reason to stay sober.... I asked myself the question, “Why am I here? Just to drink?” No, a sense of purpose gives me something to work with. Everybody don’t go to meetings or to church or believe in a higher power. You’ve got to have a purpose, something that you believe in.”
Life Meaning mediates the effect of 12-step participation on sustained abstinence
12-step attendance predicts sustained abstinence

Effect of 12-step attendance on abstinence partially mediated by Life meaning

MEDIATION MODEL FOR 12-STEP ATTENDANCE

12-step attendance between baseline and F1 → .0064*** Exp(B) = 1.0 → Sustained abstinence @ F2

BL abstinence duration → .038*** Exp(B) = 1.03

.0058** Exp(B) = 1.0

12-step attendance between baseline and F1

BL abstinence duration

Life meaning at F1 → .88* Exp(B) = 2.42 → Sustained abstinence @ F2

.038*** Exp(B) = 1.03
12-step involvement predicts sustained abstinence

Effect of 12-step involvement on sustained abstinence partially mediated by Life meaning (19%)

MEDIATION MODEL FOR 12-STEP INVOLVEMENT

12-step involvement between baseline and F1 → \(0.16^{***}\) \(\text{Exp}(B) = 1.18\) → Sustained abstinence @ F2

BL abstinence duration → \(0.037^{***}\) \(\text{Exp}(B) = 1.03\)

Degree of 12-step involvement between baseline and F1 → \(0.13^{**}\) \(\text{Exp}(B) = 1.13\) → Sustained abstinence @ F2

BL abstinence duration → Life meaning at F1 → \(0.91^{**}\) \(\text{Exp}(B) = 2.48\) → Sustained abstinence @ F2

BL abstinence duration → \(0.037^{***}\) \(\text{Exp}(B) = 1.03\)
Deconstructing 12-step involvement
Many substance users choose not to attend 12-step meetings or they drop out after a short period of attendance.

*Involvement* in 12-step activities (e.g., reading recovery literature, having a sponsor) enhances the likelihood of abstinence independently of meeting attendance among treatment-seeking persons.

There is a need to specify the elements of 12-step involvement that underlie its benefits and may be helpful independently of meeting attendance or even outside of the 12-step context.

We examine:

- The role of overall 12-step involvement level in predicting *continuous abstinence sustained over three years* independently of meeting attendance; and
- Gender differences in these processes.
Past year 12-step attendance @ BL and Number of meetings attended (among attendees)

- Meeting attendance: yes/no
  - Men: 70.4
  - Women: 72.6
  - n.s.

- Number of meetings attended
  - Men: 96.5
  - Women: 108.8
‘Any’ 12-step involvement past year at baseline and involvement level

Men: 63.5, Women: 66.9

Scale range = 0 to 9

n.s. (not statistically significant)

Men: 4.1, Women: 4.5
Sustained continuous drug abstinence over three years

- Males: 45.9%
- Females: 59.5%

P<0.05
Odds of sustained abstinence over 3 years as a function of baseline 12-step involvement controlling for baseline abstinence duration and 12-step meeting attendance

Males: Odds ratio = 1.0
Females: Odds ratio = 1.18*

*p<.05
Odds of sustained abstinence over 3 years for individual 12-step activities @ BL controlling for baseline abstinence duration: AMONG WOMEN

- Socializes w/12-step members: 2.82**
- Reads 12-step lit.: 2.57*
- Contact outside meetings: 3.01**
- Service: 3.03**
- Stepwork: 2.26**
- Home group: 2.85**
- ID as 12-step member: 3.51**
- Is sponsor: 0.3
- Has sponsor: 2.64*

*p< .05  **p< .01
### Odds of sustained abstinence over 3 years for individual 12-step activities @ BL controlling for baseline abstinence duration: AMONG MEN

<table>
<thead>
<tr>
<th>Activity</th>
<th>Odds Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socializes w/12-step members</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td>Reads 12-step lit.</td>
<td>1.07</td>
<td></td>
</tr>
<tr>
<td>Contact outside meetings</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>1.63</td>
<td></td>
</tr>
<tr>
<td>Stepwork</td>
<td>2.16*</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Home group</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>ID as 12-step member</td>
<td>1.99</td>
<td></td>
</tr>
<tr>
<td>Is sponsor</td>
<td>3.76</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

* *p* < .05  ** *p* < .01
Deconstructing 12-step involvement:
Implications

- AT BASELINE, no gender differences in substance use history, prior exposure to treatment (not shown), 12-step attendance or involvement in this formerly severely drug-dependent sample.

- Yet women were significantly more likely than men to sustain abstinence over three years.

- BL 12-step involvement level significantly predicted continuously sustained drug abstinence over three years independently of meeting attendance among women but not among men.

- Some of the individual 12-step activities associated with sustained abstinence among women are specific to the 12-step context (Identifying as a 12-step member, having a sponsor and a home group).

- Others may be “translated” outside of 12-step recovery for persons who select not to affiliate with 12-step
  - Doing service = volunteering,
  - Spending time with other persons in recovery regardless of 12-step affiliation

- More research is needed to determine the benefits of such activities outside of the 12-step context in sustaining abstinence and promoting sustained recovery.
ACT THREE:
Are 12-step underutilized? Why?
12-step attendance patterns
12-step Attendance patterns at treatment admission (N = 314)

- Attended past year: 58%
- Disengaged: 23%
- Never attended: 19%
12-step attrition: Ever dropped out?

Since you first started attending, have you ever stopped attended for one month or longer? (yes) *

- Narcotics Anonymous: 85%
- Alcholics Anonymous: 91%

* Other than being in a closed institution: Among current attenders
How many different times did you stop attending for a month or longer since you began attending meetings?

Narcotics Anonymous: mean (SD) 6.1 (13.2)
Alcoholics Anonymous: 6.4 (12.1)

How long was the longest interruption in attendance? (in months)

Narcotics Anonymous: mean (SD) 29.8 (27.7)
Alcoholics Anonymous: 29.9 (30.8)

12-STEP CAREER LIKE TREATMENT CAREER, CONSISTS OF MULTIPLE INTERRUPTED EPISODES OF PARTICIPATION
Pathways: Three-year Patterns of 12-step affiliation

12-STEP ATTENDANCE AND INVOLVEMENT DECREASE OVER TIME....

(N = 289)
Attitudes about 12-step among Outpatient Clients

- Helpfulness of 12-step: 8.02
- Importance of 12-step in treatment: 7.86
- Importance of 12-step in recovery process: 8.70

*Scale range from 0 to 10*
### Reasons for Attending NA and AA among polysubstance users*

<table>
<thead>
<tr>
<th>Reason</th>
<th>NARCOTICS ANONYMOUS (N=150)</th>
<th>ALCOHOLICS ANONYMOUS (N=88)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotes recovery/sobriety</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>Support/acceptance/fellowship</td>
<td>33%</td>
<td>58%</td>
</tr>
<tr>
<td>None (did not get anything out of it)</td>
<td>18%</td>
<td>10%</td>
</tr>
<tr>
<td>Mandated/pressured</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>To make friends, to check it out</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Step work, spirituality</td>
<td>3%</td>
<td>8%</td>
</tr>
</tbody>
</table>

* Among ‘ever’ attenders; total >100% b/c up to 3 answers coded
Obstacles to 12-step affiliation and reasons for non-attendance
## Reasons for 12-step attrition*

*Why did you stop attending? (longest interrupted period)*

<table>
<thead>
<tr>
<th>Reason</th>
<th>NARCOTICS ANONYMOUS (N=120)</th>
<th>ALCOHOLICS ANONYMOUS (N=72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using/not ready to stop</td>
<td>27%</td>
<td>33%</td>
</tr>
<tr>
<td>Didn’t like it/tired of it</td>
<td>26%</td>
<td>19%</td>
</tr>
<tr>
<td>Didn’t need it/I can recover on my own</td>
<td>25%</td>
<td>0%</td>
</tr>
<tr>
<td>Limited to drug or alcohol/no identification</td>
<td>0%</td>
<td>15%</td>
</tr>
<tr>
<td>Not helpful</td>
<td>13%</td>
<td>1%</td>
</tr>
<tr>
<td>Went to alternative fellowship</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Time/location fellowship</td>
<td>8%</td>
<td>15%</td>
</tr>
<tr>
<td>Not comfortable sharing</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Not required</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td>No reason</td>
<td>3%</td>
<td>13%</td>
</tr>
</tbody>
</table>

* Among those reporting disengagement, total >100% b/c up to 3 answers coded
Hmmm....

This sounds familiar...
Attributions of Relapse

What got you back to using? Top answers (<10%)

1. Exposed to triggers (e.g., drugs, money)
2. Stressful event/situation
3. Urge/craving/wanted to use
4. Felt could handle/forgot I was addicted

Among those who report one or more such periods: N=253
Lessons learnt from Relapse

Top answers (<10%)

What if anything have you learnt from the relapse experience?

- Must want recovery/make it a priori... 21.8%
- Clean = good/drugs = bad 18.7%
- Learn about/avoid from triggers 18.3%
- Cannot recover w/out support 15.1%
- Need to address issues/express f... 11.5%
- I'm an addict/can't use socially 10.3%

b Among those who report one or more such periods: N=253
Strategies to deal with threats to abstinence

Among those who report a challenge

Seek help/support, Talk about pb 44%

Distraction 6%

Meditate/pray 8%

Stay focused/motivated 42%
Lessons learnt from relapse about what it takes to recover:

- Must want to recover/stay focused
- Cannot do it alone

Reasons for not going to 12-step:

- Not ready to recover (motivation)
- I can do it on my own (don’t need support)

Moral of the story:

- MOTIVATION ENHANCEMENT and
- ACCEPTING/SEEKING HELP and SUPPORT
The usual suspect as Predictor of 12-step attendance: Severity
<table>
<thead>
<tr>
<th></th>
<th>Ever %</th>
<th>Dependence Severity Mean&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Alcohol among problem substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neither NA or NA</td>
<td>21.6</td>
<td>5.5</td>
<td>25.9</td>
</tr>
<tr>
<td>NA only</td>
<td>35.3</td>
<td>7.8*</td>
<td>43.2</td>
</tr>
<tr>
<td>AA only</td>
<td>5.4</td>
<td>8.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Both AA and NA</td>
<td>37.7</td>
<td>8.6*</td>
<td>29.5</td>
</tr>
</tbody>
</table>

GREATER SEVERITY MORE LIKELY TO HAVE ATTENDED BOTH FELLOWSHIPS

<sup>a</sup> scale range 0 - 14
ACT FOUR:
Strategy to promote 12-step affiliation
Treatment-level predictor of 12-step participation: Onsite meetings
Number of 12-step meetings past month as a function of 12-step meeting **on site during** treatment

All p<.05 except where noted; * trend: p = .069. Laudet et al. Evaluation Review, 31(6), 613-646, 2007
% did not use drugs or alcohol since prior interview as a function of 12-step meeting onsite during treatment

All p<.05. Laudet et al. Evaluation Review, 31(6), 613-646, 2007
All you need is...

The will to call H&I, a room and a coffee pot (*resentment optional, cookies a plus*)
ACT FIVE: so what?
Integration of Findings
Twelve-step attendance and involvement significantly enhance the odds of sustaining abstinence among formerly polysubstance dependent persons. This extends in scope and in time the empirical knowledge base on the effectiveness of 12-step affiliation for addressing substance use disorders:

- To community-based polysubstance users
- To maintaining abstinence from substance use

12-step involvement is especially beneficial among persons with several years of abstinence.

12-step involvement appears particularly important for women.

Several components of 12-step involvement can be translated outside the 12-step context.
Integration of Findings [2]

- Twelve step attendance patterns mirror addiction and treatment ‘careers’ (multiple interrupted episodes).

- 12-step attendance declines over time, possibly mitigating its usefulness

- In addition, a substantial minority of substance users choose not to participate in 12-step

- Though reasons for not attending vary, a number of factors cited echo perceived reasons for returning to active substance use:
  - Wanting to use/not motivated to stop
  - Low problem recognition
  - Low recognition of need to seek/accept help

- Treatment programs can easily enhance the likelihood of post treatment 12-step participation and abstinence by holding a meeting onsite
Want more findings on 12-step and on recovery?

laudet@ndri.org
http://www.ndri.org/ctrs/cstar.html