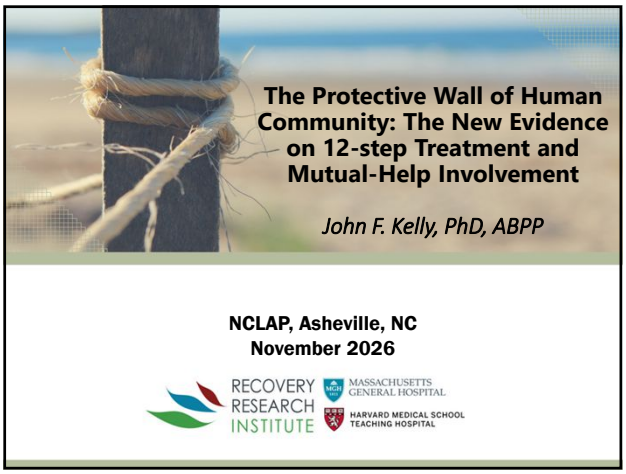


The Protective Wall of Human Community: The New Evidence on 12-step Treatment and Mutual-Help Involvement

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NCLAP, Asheville, NC
November 2026

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1

A brief word on Terminology…

Twelve-Step Facilitation (TSF) – are typically outpatient delivered interventions the central goal of which is to link and engage patients with community-based 12-step groups (e.g., AA)

Twelve-Step Treatment – typically refers to residential treatment which is often referred to as "Minnesota Model" type care…

The Minnesota Model is an inpatient/residential model that is a combination of the medical and social recovery models (multidisciplinary), but is essentially as "self-help model" (McElrath, 1997)

Twelve-Step Groups/Mutual-help organizations are entities like Alcoholics Anonymous (AA)/Narcotics Anonymous (NA), Cocaine Anonymous (CA) etc that are community based freely available recovery support resources

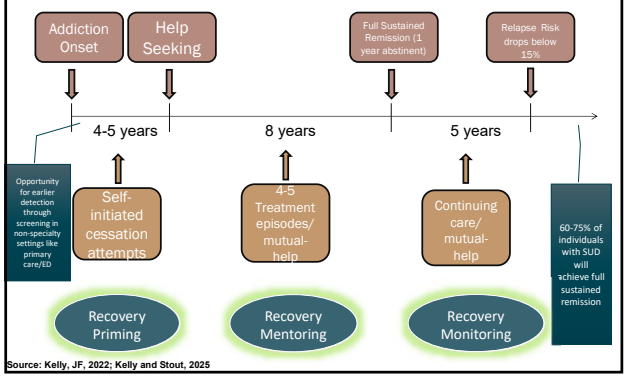
2

Clinical and Public Health Significance of TSF/AA Research

- Alcohol – global problem; especially in middle-high income countries
  - 3.3M deaths annually (10x > than all illicit drugs combined)
  - The top risk factor for premature mortality among men of working age worldwide
  - Major contributor to DALYs (particularly developed world)
  - AA is a **freely available**, **ubiquitous**, **indigenous**, **flexible**, **recovery support** service operating in 120,000 groups each week, with more than 2M members worldwide - a de facto part of system of care for AUD/other SUD
  - Treatments that link patients to these free ubiquitous indigenous recovery support resources tend to produce cost-effective models of care…

3

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



Source: Kelly, JF, 2022; Kelly and Stout, 2025

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Advantages of recovery support services in disease/recovery management….

- Available
- Accessible
- Flexible
- Enduring
- Low/no cost

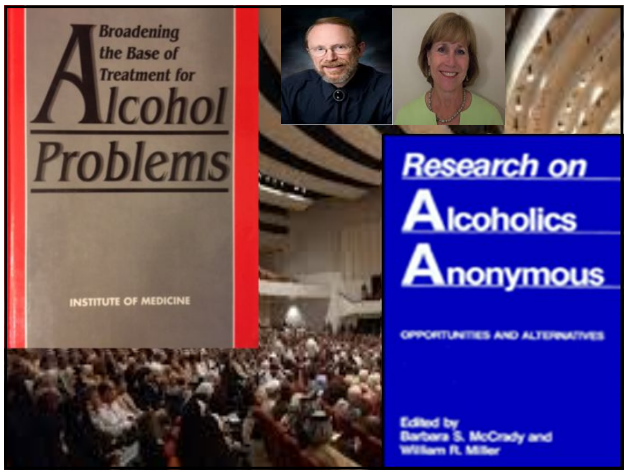
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AA/TSF Relevance: Confusion and skepticism regarding the science on AA/12-step interventions…

- Public and public health confusion about efficacy of AA/TSF
- Negative media portrayals of AA's effectiveness
- Not new: "When my head doctor, Silkworth, began to tell me of the idea of helping drunks by spirituality, I thought it was crackpot stuff, but I've changed my mind. One day this bunch of ex-drunks of yours is going to fill Madison Square Garden"

-AA, 1947

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TSF Delivery Modes

Stand alone
Independent therapy

Integrated into an existing therapy

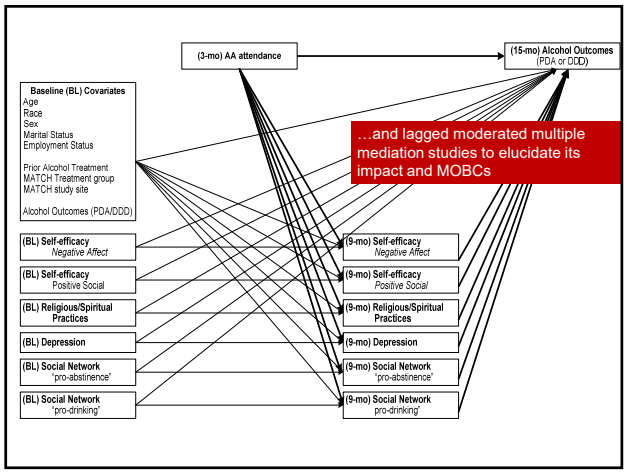
Component of a treatment package (e.g., an additional group)

As Modular appendage linkage component

In past 30 years, AA research has gone from contemporaneous correlational research to rigorous RCTs, quasi-experiments, cost utility, and MOBC research …

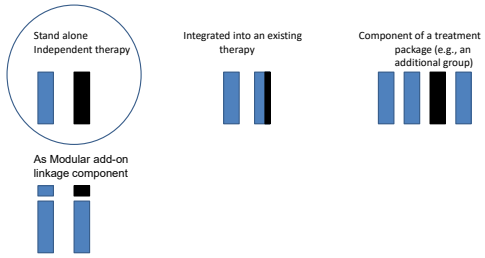
Kelly and McCrady, 2013

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TSF Delivery Modes



Kelly and McCrady, 2013

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Project MATCH

» Multisite randomized clinical trial of alcohol dependent individuals

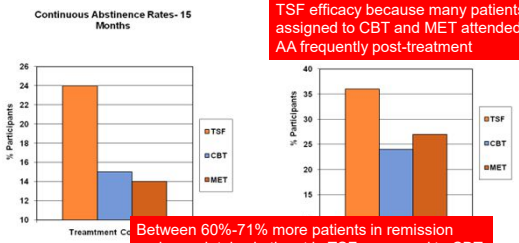
- 2 arms
  - Aftercare (n=774)- recently finished inpatient treatment
  - Outpatient (n=952)
- 3 conditions, all with ultimate goal of abstinence
  - **Twelve Step Facilitation**
    - Assisted in engagement with AA; abstinence oriented/disease model
  - **Cognitive Behavioral Therapy**
    - Therapist assisted in building skill set to maintain abstinence
  - **Motivational Enhancement Therapy**
    - Therapist aimed to build motivation to accept abstinence

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Project MATCH- Results

- All treatments did **equally well on main outcomes** (PDA; DDD)
- Across txs, pts attending AA better outcomes (Tonigan et al, 2002)
- Substantially higher proportion of patients con**tinuously abstinent/in remission** at 1- and 3-yr follow-up

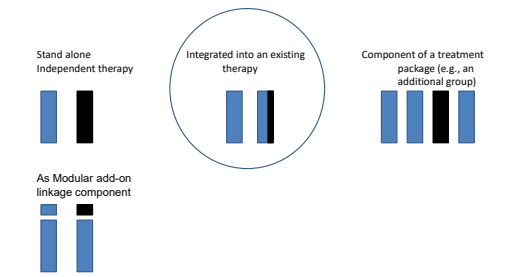
These are conservative estimates of TSF efficacy because many patients assigned to CBT and MET attended AA frequently post-treatment



Between 60%-71% more patients in remission and completely abstinent in TSF compared to CBT and MET respectively

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TSF Delivery Modes



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Strategies for Facilitating Outpatient Attendance of AA (Wallitzer et al, 2008)

- Approaches to assist in involvement in AA
- 169 adult alcoholic outpatients randomly assigned to one of three treatment conditions
- All clients received treatment that included:
  - 12 sessions
  - Focus on problem-solving, drink refusal, relaxation
  - Recommendation to attend AA meetings

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Strategies for Facilitating Outpatient Attendance of AA

- Treatment varied between 3 conditions in terms of how the therapist discussed AA and how much information about AA was shared
  - **Condition 1: Directive approach**
    - Therapist directed
    - Client signed contract describing goals to attend AA meetings
    - Therapist encouraged client to keep a journal about meetings
    - Reading material about AA provided to client
    - Therapist informs client about skills to use during meetings and about using a sponsor
    - 38% total material covered in sessions was about AA
  - **Condition 2: motivational enhancement approach (more client centered)**
    - Therapist obtains clients feelings and attitudes about AA
    - Therapist describes positive aspects of AA, but states that it is up to the client how much they will be involved
    - Therapist intends to assist the client in making a decision in favor of AA
    - 20% total material covered in sessions about AA
  - **Condition 3: CBT treatment as usual, no special emphasis on AA**
    - Throughout treatment, therapist briefly inquires about AA and encourages client to attend AA
    - 8% total material covered in sessions about AA

Walitzer, Dermen & Barrick, 2009

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Strategies for Facilitating Outpatient Attendance of AA- Findings

- Participants exposed to the Directive TSF approach reported significantly more:
  - attendance of AA meetings
  - more active involvement in AA
  - higher percent days abstinent in comparison to the motivational and treatment as usual groups
- Evidence suggests AA involvement partially mediated the effects of the directive approach

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Changing Network Support for Drinking (Litt et al., 2009)

- Network Support Project -to determine if tx can change social networks to be supportive of sobriety
- Alcohol dependent individuals (N=210) randomly assigned to 1 of 3 txs:
  - Network Support (NS)
    - Meant to help patients change social network to include people in support of abstinence; based on TSF treatment created for Project MATCH; 6 core sessions+ 6 elective sessions
  - Network Support +Contingency Management (NS+CM)
    - Same network support as described above, plus drawings from a "fishbowl" if soc. network enhancing tasks completed (eg. AA meeting, having coffee with a sober friend)
  - Case Management (CaseM, control condition)
    - Based on intervention used in Marijuana Treatment Project; therapist and participant worked together to identify barriers to abstinence and develop goals and identify resources to be used to aid in achieving abstinence

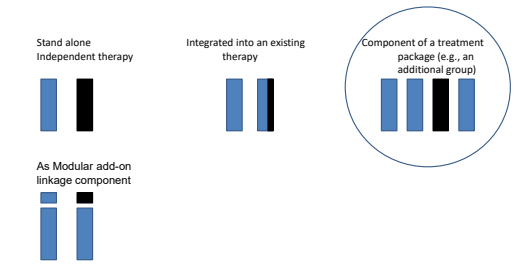
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Changing Network Support for Drinking Findings

- Results indicated NS did best; NS+CM did worse than NS alone, but better than CaseM
- Participants in NS condition:
  - 20% more days abstinent than those in other conditions at 2 year follow-up
    - NS: 80%, NS+CM: 60%, CaseM: 60%
  - greater increases in social network support for abstinence, AA attendance and AA involvement than those in other conditions at 15 month follow-up

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TSF Delivery Modes



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MAAEZ Intervention (Kaskutas et al, 2009)

- Making AA Easier- manual guided - designed to help clients prepare for AA
- Goal: to prepare for AA (encourage participation in AA, minimize resistance to AA, and educate about AA)
  - MAAEZ intervention is conducted in a group format to help prepare for group dynamic of AA
- Facilitator goal: to inform clients about AA and facilitate group interaction
  - Facilitator recommended to be an active member of AA, NA, or CA
- Discussion format: MAAEZ allows and encourages feedback (referred to as "cross-talk" in MAAEZ), unlike AA which does not allow feedback

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MAAEZ Intervention- Design

- Structure of Program:
- Six, weekly, 90-minute sessions
  - Homework assigned at the end of each session
    - List of texts for reading assignments provided in manual
    - List of articles that discuss effectiveness of AA provided in manual
    - Each homework assignment includes going to at least one AA meeting in the 7 days following that session, making connections with other people in AA, and completing reading assignments

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MAAEZ Intervention- Results

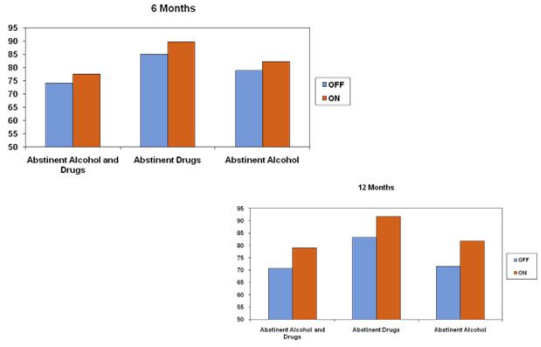
» Abstinence:
  > TSF participants significantly more past 30 day alcohol abstinence, drug abstinence, and both alcohol and drug abstinence at 12 month time period
  > Increased odds of continuous abstinence in general and for each additional MAAEZ session attended

» Prior AA Exposure:
  > MAAEZ found to be more effective in participants with AA previous experience (differs from outcomes found in Project MATCH), possibly because MAAEZ gives clients new perspective of AA

Kaskutas et al 2009

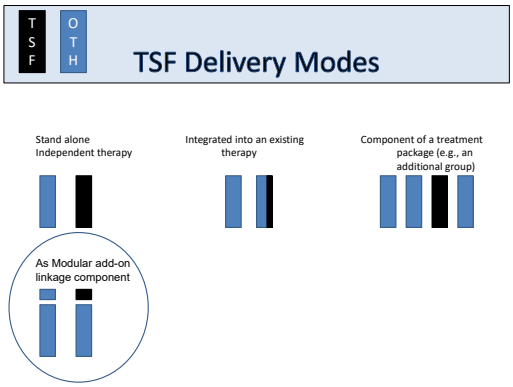
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MAAEZ Intervention- Results



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TSF Delivery Modes



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Precursor to current TSF research (Sisson and Mallams, 1981)

» 20 patients randomly selected from outpatient tx program for alcohol use disorder

» Randomly assigned to:

> 1: Standard referral

- given information about AA including time, date, location of meetings, encouraged to attend meetings

> 2: Systematic encouragement and community access

- In addition to standard procedure, clients had phone conversation with AA member during a session - client and AA member met before first meeting, member provided client with ride; client also received a reminder phone call from the member

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Precursor to current 12-Step facilitation research

» Results:

> 0% clients in standard referral attended a meeting during the target week

> 100% clients in systematic encouragement and community access group attended meeting during target week

> Mean AA meeting attendance rate for 4 week period:

+ 0 for standard referral group vs 2.3 for systematic encouragement group

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Effectiveness of Clinician Referrals to AA (Timko et al 2006; 2007)

- Evaluation of procedures to effectively refer patients to 12-step meetings
- Individuals with SUDs entering a new outpatient treatment program randomly assigned to a treatment condition and provided self reports on meeting attendance and substance use
  - **Condition 1: standard referral**
    - Patients given locations and schedules of meetings and encouraged to attend
  - **Condition 2: intensive referral**
    - Patients give locations and schedules of meetings, with the meetings preferred by previous clients indicated
    - Therapist reviews a handout about program including introduction to 12-step philosophy and common concerns
    - **Therapist arranged a meeting with a current member and client had a phone conversation with this member during a session**
    - Therapist and client agreed on which meetings client will attend and client kept a journal of meetings attended and experiences

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Effectiveness of Clinician Referrals to AA-Results

» At 6m, patients in intensive referral who had relatively less previous 12-Step experience had:

> higher meeting attendance
> better substance use outcomes

» At both the 6 and 12 month follow up, patients in intensive referral:

> more likely to attend at least one meeting per week
> had higher rates of attendance and had higher rates of abstinence

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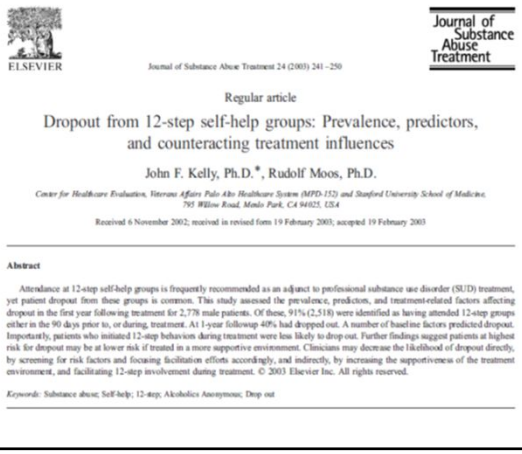
TSF Experimental studies (RCTs) all outpatient. What about residential studies?

The Minnesota Model is an inpatient/residential model that is a combination of the medical and social recovery models but is essentially as "self-help model (McElrath, 1997)

Multidisciplinary and multi-modal

No RCTs on residential TSF/MN model treatments but some high quality quasi-experimental studies…

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Journal of Substance Abuse Treatment

Journal of Substance Abuse Treatment 24 (2003) 241–250

Regular article

Dropout from 12-step self-help groups: Prevalences, predictors, and counteracting treatment influences

John F. Kelly, Ph.D.*, Rudolf Moos, Ph.D.

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Received 6 November 2002; received in revised form 19 February 2003; accepted 19 February 2003

Abstract

Attendance at 12-step self-help groups is frequently recommended as an adjunct to professional substance use disorder (SUD) treatment, yet patient dropout from these groups is common. This study assessed the prevalence, predictors, and treatment-related factors affecting dropout in the first year following treatment for 2,778 male patients. Of these, 91% (2,518) were identified as having attended 12-step groups either in the 90 days prior to, or during, treatment. At 1-year followup 40% had dropped out. A number of baseline factors predicted dropout. Importantly, patients who initiated 12-step behavior during treatment were less likely to drop out. Further findings suggest patients at highest risk for dropout may be at lower risk if treated in a more supportive environment. Clinicians may decrease the likelihood of dropout directly, by screening for risk factors and focusing facilitation efforts accordingly, and indirectly, by increasing the supportiveness of the treatment environment, and facilitating 12-step involvement during treatment. © 2003 Elsevier Inc. All rights reserved.

Keywords: Substance abuse; Self-help; 12-step; Alcoholics Anonymous; Drop out

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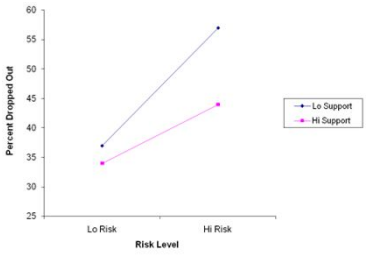
Does Facilitation During Tx Affect Risk for Dropout?

Risk Factors	Treatment Settings Combined		High Supportive Treatment milieu		Low supportive Treatment milieu	
	n	Dropout Rate	n	Dropout Rate	n	Dropout Rate
0	261	30 % (77)	151	30 % (45)	110	29 % (32)
1	548	30 % (163)	274	29 % (79)	274	31% (84)
2	582	38 % (221)	269	38 %(103)	313	38 % (118)
3	512	43 % (218)	176	40 % (70)	336	44% (148)
4	381	51 % (193)	119	42 % (50)	262	55% (143)
5	150	54 % (81)	36	47 % (17)	114	56% (64)
6-7	78	65 % (51)	16	50 % (8)	62	70% (43)

- **Dropout rate from AA/NA at 1-year follow-up post-residential treatment = 40%**
- **AA/NA dropouts had 3x higher odds of relapse to alcohol/drug use**

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Facilitation by Dropout-Risk Interaction

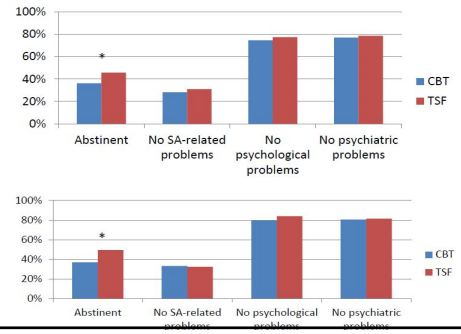


Source: Kelly & Moos (2003) Dropout from 12-Step Groups: Prevalence, Predictors and Counteracting Treatment Influences, *Journal of Substance Abuse Treatment,24, 241-250*

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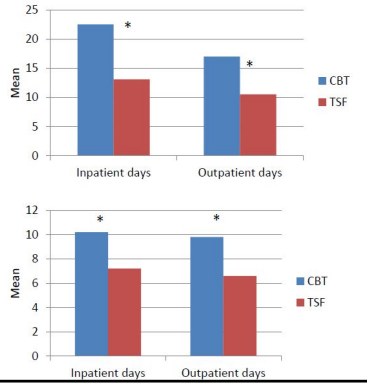
Effectiveness/Cost-Effectiveness Model of Recovery Support through facilitating 12-step involvement?

Health care cost offset (I) 1yr (above) & 2yr (below)
Clinical outcomes



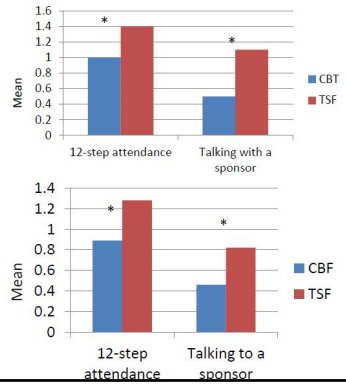
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Cost-effectiveness (I) 1YR (above) and 2YR Follow-Up
Mental health care utilization



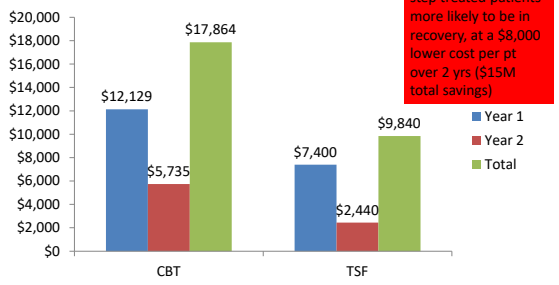
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Cost-effectiveness (I) 1YR Follow-Up
3. Self-help group involvement



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Health Care cost offset
CBT vs 12-Step Residential Treatment



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Alcoholism: Clinical and Experimental Research Vol. 32, No. 8
August 2008

Social Recovery Model: An 8-Year Investigation of Adolescent 12-Step Group Involvement Following Inpatient Treatment

John F. Kelly, Sandra A. Brown, Ana Abrantes, Christopher W. Kahler, and Mark Myers

Background: Despite widespread use of 12-step treatment approaches and referrals to Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) by youth providers, little is known about the significance of these organizations in youth addiction recovery. Furthermore, existing evidence is based mostly on short-term follow-up and is limited methodologically.

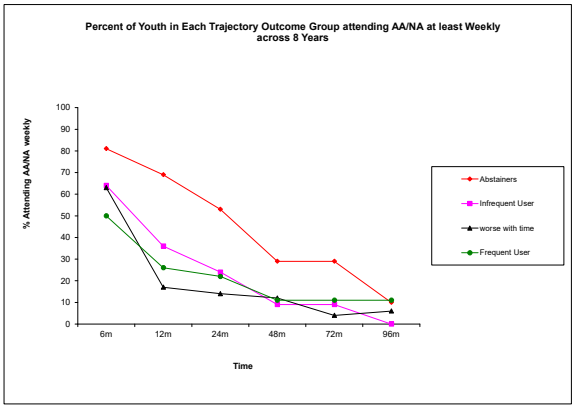
Methods: Adolescent inpatients (n = 160; mean age = 16, 40% female) were followed at 6-months, and at 1, 2, 4, 6, and 8 years posttreatment. Time-lagged, generalized estimating equations modeled treatment outcome in relation to AA/NA attendance controlling for static and time-varying covariates. Robust regression (locally weighted scatterplot smoothing) explored dose–response thresholds of AA/NA attendance on outcome.

Results: The AA/NA attendance was common and intensive early posttreatment, but declined sharply and steadily over the 8-year period. Patients with greater addiction severity and those who believed that they could not use substances in moderation were more likely to attend. Despite declining attendance, the effects related to AA/NA remained significant and consistent. Greater early participation was associated with better long-term outcomes.

Conclusions: Even though many youth discontinue AA/NA over time, attendees appear to benefit, and more severely substance-involved youth attend most. Successful early posttreatment engagement of youth in abstinence-supportive social contexts, such as AA/NA, may have long-term implications for alcohol and drug involvement into young adulthood.

Key Words: Mutual-Help Groups, Self-Help, Alcoholics Anonymous, Narcotics Anonymous, Adolescents.

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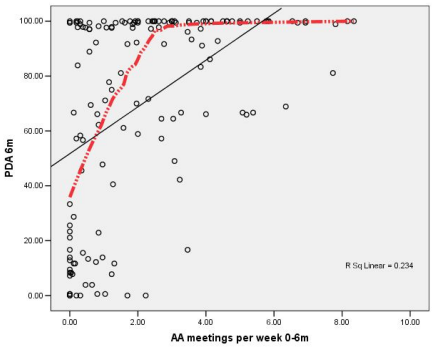
Lagged GEE Model of Youth Treatment Outcome in relation to AA/NA attendance over 8 Years

Parameter	Estimate	Standard Error	95% Confidence Limits		Z	P
Intercept	37.3071	6.9601	23.6656	50.9486	5.36	<.0001
Time	1.4424	0.8693	-0.2614	3.1462	1.66	0.0971
Gender	-9.3380	2.6605	-14.5526	-4.1234	-3.51	0.0004
Pre-treatment PDA	-0.0811	0.0490	-0.1772	0.0150	-1.65	0.0980
Moderate use	-1.8816	0.9646	-3.7722	0.0090	-1.95	0.0511
Aftercare[1] 6m	0.4349	0.5158	-0.5761	1.4460	0.84	0.3991
Formal Treatment[2]	5.5669	3.2856	-0.8727	12.0065	1.69	0.0902
AA/NA[2]	1.9517	0.4512	1.0674	2.8360	4.33	<.0001
PDA[2]	0.5030	0.0371	0.4304	0.5757	13.56	<.0001

1= Sq root transformed; 2= Time varying covariate

Kelly JF, Brown SA, Abrantes, A. et al. Social Recovery Model: An 8-Year Investigation of Youth Treatment Outcome in Relation to 12-step Group Involvement. *Alcoholism: Clinical and Experimental Research, 2008, 32, 8 1468-1478.*

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Kelly JF, Brown SA, Abrantes, A. et al. Social Recovery Model: An 8-Year Investigation of Youth Treatment Outcome in Relation to 12-step Group Involvement. *Alcoholism: Clinical and Experimental Research, 2008, 32, 8 1468-1478.*

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Drug and Alcohol Dependence 129 (2013) 151–157

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Drug and Alcohol Dependence

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Emerging adults' treatment outcomes in relation to 12-step mutual-help attendance and active involvement

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ABSTRACT

Background: Participation in Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) during and following treatment has been found to confer recovery-related benefit among adults and adolescents, but little is known about emerging adults (18–24 years). This transitional life-stage is distinctive for greater distress, higher density of psychopathology, and poorer treatment and continuing care compliance. Greater knowledge would inform the utility of treatment referrals to 12-step organizations for this age-group.

Methods: Emerging adults ($N = 303$; 18–24 years; 26% female; 95% White; 51% comorbid [SCID-derived] axis I disorders) enrolled in a naturalistic study of residential treatment effectiveness assessed at intake, 3, 6, and 12 months on 12-step attendance and involvement and treatment outcomes (percent days abstinent [PDA]; percent days heavy drinking [PDHD]). Lagged hierarchical linear models (HLMs) tested whether attendance and involvement conferred recovery benefits, controlling for a variety of confounds.

Results: The percentage attending 12-step meetings prior to treatment (36%) rose sharply at 3 months (89%), was maintained at 6 months (82%), but declined at 12 months (76%). Average attendance peaked at about 3 times per week at 3 months dropping to just over once per week at 12 months. Initially high, but similarly diminishing, levels of active 12-step involvement were also observed. Lagged HLMs found beneficial effects for attendance, but stronger effects, which increased over time, for active involvement. Several active 12-step involvement indices were associated individually with outcome benefits.

Conclusions: Ubiquitous 12-step organizations may provide a supportive recovery context for this high-risk population at a developmental stage where non-using/sober peers are at a premium.

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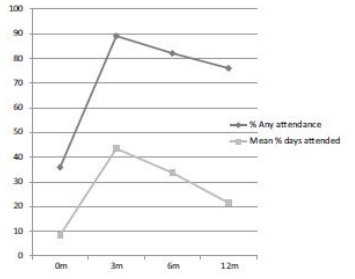


Fig. 1. Proportion of sample attending any 12-step meetings and mean% days attended across time.

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Results: Significant independent effects for attendance on abstinence from all drugs and reduced heavy alcohol use, and stronger effects for 12-step involvement (lagged, controlled, prospective models)

Table 2
HLM models of the lagged effects of (a) 12-step attendance, (b) 12-step involvement, and (c) both, at 3 m and 6 m follow-ups on subsequent PDA and PDHD at 6 m and 12 m outcomes.

	PDA					PDHD				
(a)										
PDA/HDD 0 m										
Commitment to sobriety 0 m										
Gender										
Education										
Prior SUD treatment 0 m										
12-Step social 0 m										
SOCRATES ambivalence										
SOCRATES taking steps										
Time										
12-Step attendance										
12-Step attendance × time										
(b)										
PDA/HDD 0 m										
Commitment to sobriety 0 m										
Gender										
Education										
Prior SUD treatment 0 m										
12-Step social 0 m										
SOCRATES ambivalence										
SOCRATES taking steps										
Time										
12-Step involvement	0.151	0.219	0.042	31.27	0.000	−0.014	−0.219	0.010	18.81	0.000
12-Step involvement × time	0.076	0.128	0.049	2.46	0.118	−0.001	−0.008	0.012	0.01	0.911
(c)										
PDA/HDD 0 m	0.008	0.004	0.122	0.00	0.945	0.171	0.177	0.052	10.94	0.001
Commitment to sobriety 0 m	0.384	0.242	0.098	15.30	0.000	−0.046	−0.130	0.021	4.61	0.033
Gender	−0.205	−0.055	0.204	1.01	0.315	0.031	0.037	0.044	0.49	0.483
Education	0.064	0.120	0.029	4.77	0.030	−0.013	−0.107	0.006	4.09	0.045
Prior SUD treatment 0 m	−0.307	−0.099	0.218	2.83	0.094	0.127	0.166	0.047	8.40	0.004
12-Step social 0 m	−0.030	−0.159	0.011	6.74	0.010	0.004	0.002	0.002	2.42	0.121
SOCRATES ambivalence	0.001	0.003	0.022	0.00	0.964	0.003	0.042	0.005	0.47	0.496
SOCRATES taking steps	0.001	0.004	0.014	0.00	0.954	0.002	0.046	0.003	0.48	0.488
Time	0.117	0.035	0.258	0.20	0.651	−0.075	−0.102	0.064	1.38	0.242
12-Step attendance	0.009	0.171	0.004	0.91	0.342	−0.001	−0.105	0.001	0.17	0.681
12-Step attendance × time	−0.014	−0.258	0.005	7.23	0.008	0.002	0.175	0.001	2.83	0.094
12-Step involvement	0.101	0.146	0.046	24.56	0.000	−0.026	−0.171	0.011	15.19	0.000
12-Step involvement × time	0.171	0.263	0.060	8.05	0.004	−0.016	−0.122	0.015	1.22	0.220

Significant independent effects for attendance on abstinence from all drugs and reduced heavy alcohol use, and stronger effects for 12-step involvement (lagged, controlled, prospective models)

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Independent Additive 12-Step Participation Effects



- 3+ meetings/wk
- Having/using a Sponsor
- Verbal participation in meetings

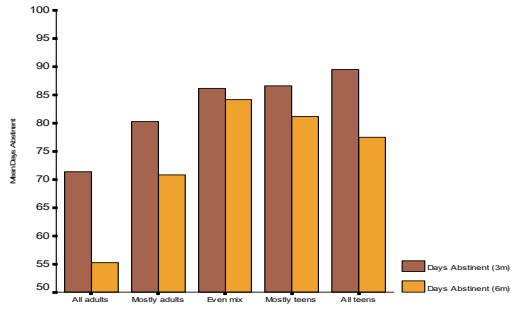
44

Does Age Matter?

- Given AA/NA is mostly comprised of older adults, do youth benefit from young people's meetings more?

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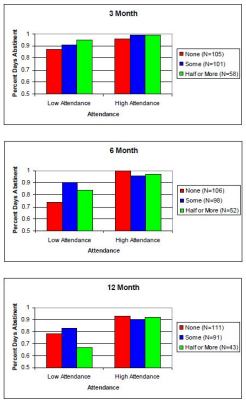
Relation between Age Composition of Attended Meetings and Percent Days Abstinent for Adolescents



Kelly, Myers & Brown, (2005) *Journal of Child and Adolescent Substance Abuse*

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Figure 1. Effect of age composition of preferred 12-step group on PDA across time.



Labbe et al (2013) *Drug and Alcohol Dependence*

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Adolescent Health Care Utilization and Cost Offset across 7-yrs

- The first study to examine how 12-Step participation affects medical costs in adolescents with SUD
- 4 intensive outpatient programs
- N = 403 adolescents, age 13-18
  - 66% male; mean age 16.1; 49% White
  - Comorbid ADHD: 17%, depression: 36%
- Follow-up: 6 months, 1, 3, 5, and 7 years
- Difference-in-difference model was used

Source: Mundt, Parthasarathy, Chi, Sterling, Campbell (2012)

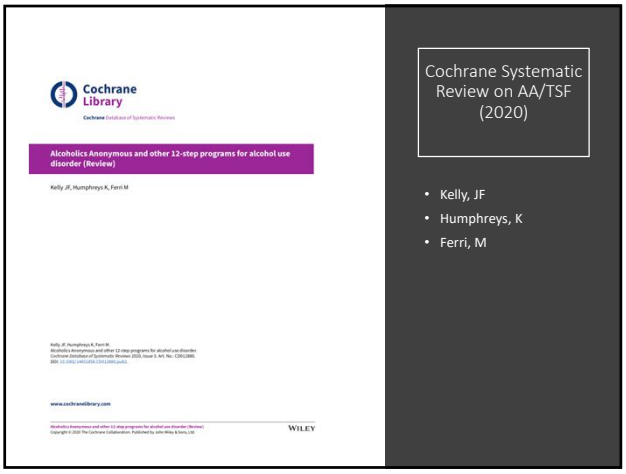
48

Adolescent Health Care Cost Offset 7-yr Study

- Avg annual medical costs for all participants over 7 years: $3085 per person per year
- 12-step participants has 3x lower odds of relapse
- 4.7% decrease in medical costs with each additional 12-step meeting attended = **$145 annual savings per 12-step meetings attended**

Source: Mundt, Parthasarathy, Chi, Sterling, Campbell (2012)

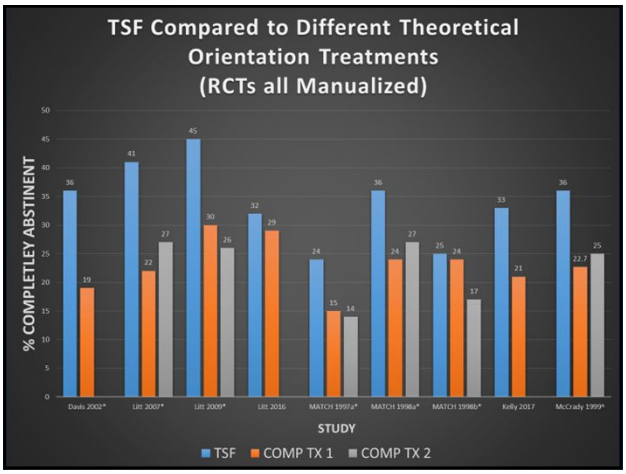
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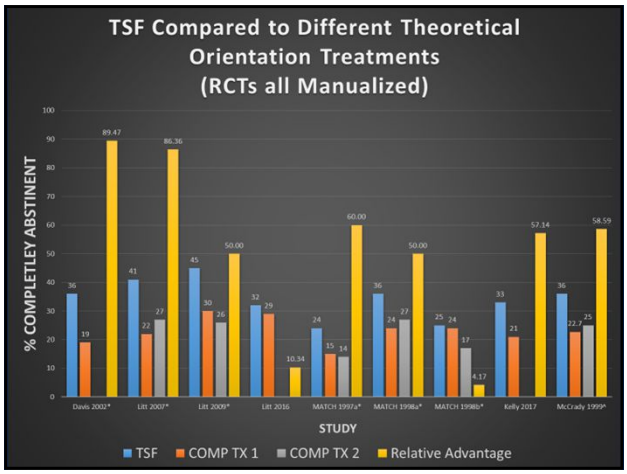
Cochrane Systematic Review on AA/TSF (2020)

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

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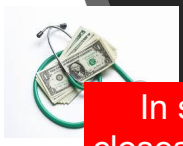


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Economic Studies

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



In short: AA may be the closest thing public health has to "a free lunch"

outcomes.

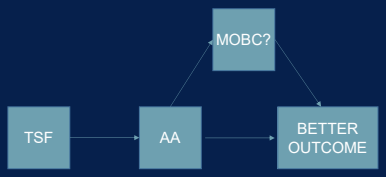
53

In Studies the conducted and reported mediational analyses…AA/TSF Causal chain supported…



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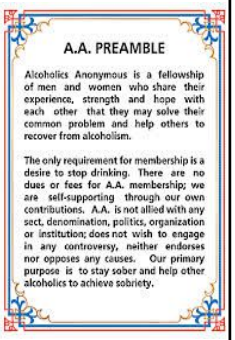
What about support for causal chain of purported mobc of AA on outcomes?



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12-STEP SPECIFIC THEORETICAL MECHANISMS: PROGRAM AND FELLOWSHIP

- Recovery achieved via a **"spiritual awakening"** achieved through working through the 12-step program
- Although sometimes manifesting as a quantum change (e.g., Bill W.) it is described broadly as most often of the "educational variety" (Appendix II AA, 2001) emerging gradually leading to "psychic change" that alters view of self, others, and world



A.A. PREAMBLE

Alcoholics Anonymous is a fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from alcoholism.

The only requirement for membership is a desire to stop drinking. There are no dues or fees for A.A. membership; we are self-supporting through our own contributions. A.A. is not allied with any sect, denomination, politics, organization or institution; does not wish to engage in any controversy, neither endorses nor opposes any causes. Our primary purpose is to stay sober and help other alcoholics to achieve sobriety.

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HOW DOES AA ENHANCE OUTCOMES? POSSIBLE MECHANISMS



Addiction Research and Theory
June 2009; 17(3): 236–259

How do people recover from alcohol dependence? A systematic review of the research on mechanisms of behavior change in Alcoholics Anonymous

JOHN FRANCIS KELLY[1], MOLLY MAGILL[2], & ROBERT LAUREN STOUT[3]

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(Received 9 January 2009; accepted 18 January 2009)

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Review found n=13 full mediational studies on MOBC and n=6 partial tests

Up until 2009, AA/TSF MOBC fell into three main categories, with most research conducted on/supporting (in descending order):

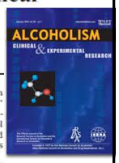
- **Common factors** (e.g., self-efficacy, motivation for abstinence; coping skills; social network changes)
- **Specific AA practices** (AA behaviors/activities, AA beliefs/cognitions)
- **AA specific processes** (e.g., spirituality)

BUT, since then, more studies conducted supporting AA's own principal MOBC –spirituality…

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Alcoholism: Clinical and Experimental Research
Vol. 35, No. 3
March 2011

Spirituality in Recovery: A Lagged Mediational Analysis of Alcoholics Anonymous' Principal Theoretical Mechanism of Behavior Change



John F. Kelly, Robert L. Stout, Molly Magill, J. Scott Tonigan, and Maria E. Pagano

Background: Evidence indicates Alcoholics Anonymous (AA) can play a valuable role in recovery from alcohol use disorder. While AA itself purports it aids recovery through "spiritual" practices and beliefs, this claim remains contentious and has been only rarely formally investigated. Using a lagged, mediational analysis, with a large, clinical sample of adults with alcohol use disorder, this study examined the relationships among AA, spirituality/religiousness, and alcohol use, and tested whether the observed relation between AA and better alcohol outcomes can be explained by spiritual changes.

Method: Adults (N = 1,726) participating in a randomized controlled trial of psychosocial treatments for alcohol use disorder (Project MATCH) were assessed at treatment intake, and 3, 6, 9, 12, and 15 months on their AA attendance, spiritual/religious practices, and alcohol use outcomes using validated measures. General linear modeling (GLM) and controlled lagged mediational analyses were utilized to test for mediational effects.

Results: Controlling for a variety of confounding variables, attending AA was associated with increases in spiritual practices, especially for those initially low on this measure at treatment intake. Results revealed AA was also consistently associated with better subsequent alcohol outcomes, which was partially mediated by increases in spirituality. This mediational effect was demonstrated across both outpatient and aftercare samples and both alcohol outcomes (proportion of abstinent days; drinks per drinking day).

Conclusions: Findings suggest that AA leads to better alcohol use outcomes, in part, by enhancing individuals' spiritual practices and provides support for AA's own emphasis on increasing spiritual practices to facilitate recovery from alcohol use disorder.

Key Words: Alcoholics Anonymous, Spirituality, Self-Help Groups, Alcoholism, Alcohol Dependence.

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Substance Abuse, 34: 20–32, 2013
Routledge
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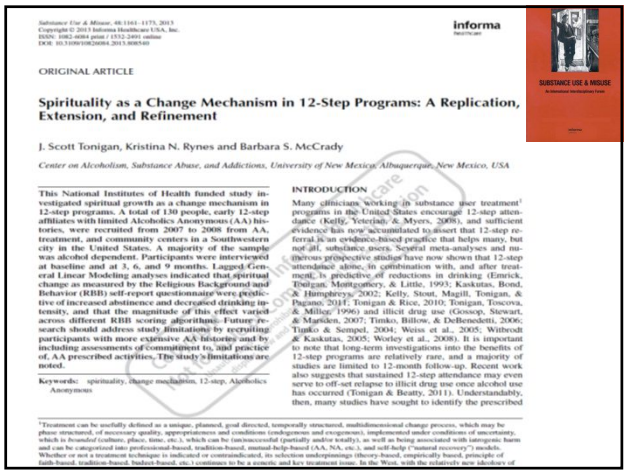
Multiple Dimensions of Spirituality in Recovery: A Lagged Mediational Analysis of Alcoholics Anonymous' Principal Theoretical Mechanism of Behavior Change

Amy R. Krentzman, PhD, James A. Cranford, PhD, and Elizabeth A. R. Robinson, PhD
University of Michigan Addiction Research Center, Ann Arbor, Michigan, USA

ABSTRACT. Alcoholics Anonymous (AA) states that recovery is possible through spiritual experiences and spiritual awakenings. Research examining spirituality as a mediator of AA's effect on drinking has been mixed. It is unknown whether such findings are due to variations in the operationalization of key constructs, such as AA and spirituality. To answer these questions, the authors used a longitudinal model to test 2 dimensions of AA as focal predictors and 6 dimensions of spirituality as possible mediators of AA's association with drinking. Data from the first 18 months of a 3-year longitudinal study of 364 alcohol-dependent individuals were analyzed. Structural equation modeling was used to replicate the analyses of Kelly et al. (*Alcohol Clin Exp Res.* 2011;35:454–463) and to compare AA attendance and AA involvement as focal predictors. Multiple regression analyses were used to determine which spirituality dimensions changed as the result of AA participation. A trimmed, data-driven model was employed to test multiple mediation paths simultaneously. The findings of the Kelly et al. study were replicated. AA involvement was a stronger predictor of drinking outcomes than AA attendance. AA involvement predicted increases in private religious practices, daily spiritual experiences, and forgiveness of others. However, only private religious practices mediated the relationship between AA and drinking.

Keywords: Alcohol use disorders, Alcoholics Anonymous, alcoholism, mechanisms of change, meditation, prayer, spirituality

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informa

SUBSTANCE USE & MISUSE

ORIGINAL ARTICLE

Spirituality as a Change Mechanism in 12-Step Programs: A Replication, Extension, and Refinement

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Center on Alcoholism, Substance Abuse, and Addictions, University of New Mexico, Albuquerque, New Mexico, USA

This National Institutes of Health funded study investigated spiritual growth as a change mechanism in 12-step programs. A total of 130 people, early 12-step affiliates with limited Alcoholics Anonymous (AA) histories, were recruited from 2007 to 2008 from AA, treatment, and community centers in a Southwestern city in the United States. A majority of the sample was alcohol dependent. Participants were interviewed at baseline and at 3, 6, and 9 months. Lagged General Linear Modeling analyses indicated that spiritual change as measured by the Religious Background and Behavior (RBB) self-report questionnaire were predictive of increased abstinence and decreased drinking intensity, and that the magnitude of this effect varied across different RBB scoring algorithms. Future research should address study limitations by recruiting participants with more extensive AA histories and by including assessments of commitment to, and practice of, AA prescribed activities. The study's limitations are noted.

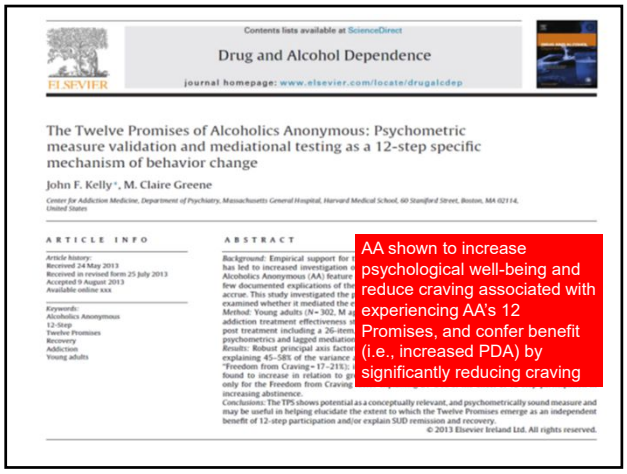
Keywords: spirituality, change mechanism, 12-step, Alcoholics Anonymous

INTRODUCTION

Many clinicians working in substance user treatment[1] programs in the United States encourage 12-step attendance (Kelly, Yeterian, & Myers, 2008), and sufficient evidence has now accumulated to assert that 12-step referral is an evidence-based practice that helps many, but not all, substance users. Several meta-analyses and numerous prospective studies have now shown that 12-step attendance alone, in combination with, and after treatment, is predictive of reductions in drinking (Emrick, Tonigan, Montgomery, & Little, 1993; Kaskutas, Bond, & Humphreys, 2002; Kelly, Stout, Magill, Tonigan, & Pagano, 2011; Tonigan & Rice, 2010; Tonigan, Toscova, & Miller, 1996) and illicit drug use (Gossop, Stewart, & Marsden, 2007; Timko, Billow, & DeBenedetti, 2006; Timko & Sempel, 2004; Weiss et al., 2005; Witbrodt & Kaskutas, 2005; Worley et al., 2008). It is important to note that long-term investigations into the benefits of 12-step programs are relatively rare, and a majority of studies are limited to 12-month follow-up. Recent work also suggests that sustained 12-step attendance may even serve to off-set relapse to illicit drug use once alcohol use has occurred (Tonigan & Beatty, 2011). Understandably, then, many studies have sought to identify the prescribed

[1]Treatment can be usefully defined as a unique, planned, goal directed, temporally structured, multidimensional change process, which may be phase structured, of necessary quality, appropriateness and conditions (endogenous and exogenous), implemented under conditions of uncertainty, which is *bounded* (culture, place, time, etc.), which can be (un)successful (partially and/or totally), as well as being associated with iatrogenic harm and can be categorized into professional-based, tradition-based, mutual-help-based (AA, NA, etc.), and self-help ("natural recovery") models. Whether or not a treatment technique is indicated or contraindicated, its selection underpinnings (theory-based, empirically based, principle of faith-based, tradition-based, budget-based, etc.) continues to be a generic and key treatment issue. In the West, with the relatively new ideology of

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The Twelve Promises of Alcoholics Anonymous: Psychometric measure validation and mediational testing as a 12-step specific mechanism of behavior change

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Twelve Promises
Recovery
Addiction
Young adults

ABSTRACT

Background: Empirical support for t
has led to increased investigation
Alcoholics Anonymous (AA) feature
few documented explications of the
accrue. This study investigated the p
examined whether it mediated the e
Method: Young adults (N = 302, M a
addiction treatment effectiveness st
post treatment including a 26-item,
psychometrics and lagged mediation
Results: Robust principal axis factor
explaining 45–58% of the variance
"Freedom from Craving" (17–21%);
found to increase in relation to gr
only for the Freedom from Craving
increasing abstinence.
Conclusions: The TPS shows potential as a conceptually relevant, and psychometrically sound measure and may be useful in helping elucidate the extent to which the Twelve Promises emerge as an independent benefit of 12-step participation and/or explain SUD remission and recovery.

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AA shown to increase psychological well-being and reduce craving associated with experiencing AA's 12 Promises, and confer benefit (i.e., increased PDA) by significantly reducing craving

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Journal of Studies on Alcohol and Drugs

CENTER OF ALCOHOL STUDIES

Negative Affect, Relapse, and Alcoholics Anonymous (AA): Does AA Work by Reducing Anger?*

JOHN F. KELLY, PH.D.,† ROBERT L. STOUT, PH.D.,† J. SCOTT TONIGAN, PH.D.,† MOLLY MAGILL, PH.D.,† AND MARIA E. PAGANO, PH.D.†

Department of Psychiatry, Center for Addiction Medicine, Massachusetts General Hospital and Harvard Medical School, 60 Stanford Street, Suite 120, Boston, Massachusetts 02114

ABSTRACT. Objective: Anger and other indices of negative affect have been implicated in a stress-induced pathway to relapse. The Alcoholics Anonymous (AA) literature states that reduction of anger is critical to recovery, yet this proposed mechanism has rarely been investigated. Using lagged, controlled hierarchical linear modeling analyses, this study investigated whether AA attendance mobilized changes in anger and whether such changes explained AA-related benefit. **Method:** Alcohol-dependent adults (N = 1,706) receiving treatment as part of a clinical trial were assessed at intake and at 3, 6, 9, 12, and 15 months. **Results:** Findings revealed substantially elevated levels of anger compared with the general population (98th percentile) that decreased over 15-month follow-up but remained high (89th percentile). AA attendance was associated with better drinking outcomes, and higher levels of anger were associated with heavier drinking. However, AA attendance was unrelated to changes in anger. **Conclusions:** Although support was not found for anger as a mediator, there was strong convergence between AA's explicit emphasis on anger and the present findings: Anger appears to be a serious, enduring problem related to relapse and heavy alcohol consumption. Methodological factors may have contributed to the lack of association between AA and anger, but results suggest that AA attendance alone may be insufficient to alleviate the suffering and alcohol-related risks specifically associated with anger. (*J. Stud. Alcohol Drugs, 71,* 434-444, 2010)

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Routledge
Taylor & Francis Group



Do Changes in Selfishness Explain 12-Step Benefit? A Prospective Lagged Analysis

J. Scott Tonigan, PhD, Kristina Rynes, PhD, Radka Toscova, PhD, and Kylee Hagler, BS

Center on Alcoholism, Substance Abuse, and Addictions, University of New Mexico, Albuquerque, New Mexico, USA; and Department of Psychology, University of New Mexico, Albuquerque, New Mexico, USA

ABSTRACT. 12-Step attendance is associated with increased abstinence. A strong claim made in 12-step literature is that alcoholics are pathologically selfish and that working the 12 steps reduces this selfishness, which, in turn, leads to sustained alcohol abstinence. This study tested this assumption by investigating the linkages between 12-step attendance, pathological narcissism, and drinking. One hundred thirty early Alcohol Anonymous (AA) affiliates with limited AA and treatment histories were recruited from treatment and community-based AA. A majority of the sample was alcohol dependent and reported illicit drug use before recruitment. Participants were interviewed at intake and at 3, 6, and 9 months. A majority of participants attended AA meetings throughout follow-up and such attendance predicted increased abstinence and reduced drinking intensity. 12-Step affiliates were significantly higher on pathological narcissism (PN) relative to general population samples and their PN remained elevated. Contrary to predictions, PN was unrelated to 12-step meeting attendance and did not predict later abstinence or drinking intensity. The findings did not support the hypothesis that reductions in PN explain 12-step benefit. An alternative function for the emphasis placed on pathological selfishness in 12-step programs is discussed and a recommendation is made to use unobtrusive measures of selfishness in future research.

Keywords: AA, mediator, self-help

Adults with alcohol and illicit drug problems frequently seek help by attending community-based 12-step programs and a majority of treatment providers encourage 12-step meeting attendance both during and after treatment (1). Meta-

anisms that are common across different approaches for treating substance misuse. The direct effect of 12-step attendance on later increases in abstinence, for example, have been explained by increased abstinence self-efficacy (10) and social

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Drug and Alcohol Dependence 114 (2011) 119–126

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journal homepage: www.elsevier.com/locate/drugalcdep



Full length article

The role of Alcoholics Anonymous in mobilizing adaptive social network changes: A prospective lagged mediational analysis

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[b] Decision Sciences Institute/PIRE, 1005 Main St., Pawtucket, RI 02860-7802, USA
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Alcoholism
Alcohol dependence

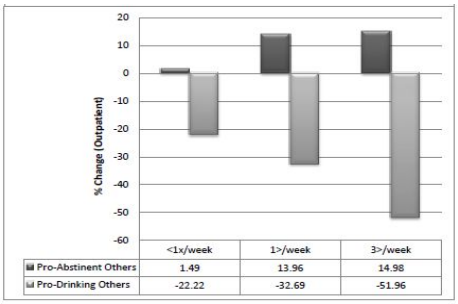
ABSTRACT

Objective: Many individuals entering treatment are involved in social networks and activities that heighten relapse risk. Consequently, treatment programs facilitate engagement in social recovery resources, such as Alcoholics Anonymous (AA), to provide a low risk network. While it is assumed that AA works partially through this social mechanism, research has been limited in rigor and scope. This study used lagged mediational methods to examine changes in pro-abstinent and pro-drinking network ties and activities.
Method: Adults (N = 1726) participating in a randomized controlled trial of alcohol use disorder treatment were assessed at intake, and 3, 9, and 15 months. Generalized linear modeling (Generalized linear modeling) tested whether changes in pro-abstinent and pro-drinking network ties and drinking and abstinent activities helped to explain AA's effects.
Results: Greater AA attendance facilitated substantial decreases in pro-drinking social ties and significant, but less substantial increases in pro-abstinent ties. Also, AA attendance reduced engagement in drinking-related activities and increased engagement in abstinent activities. Lagged mediational analyses revealed that it was through reductions in pro-drinking network ties and, to a lesser degree, increases in pro-abstinent ties that AA exerted its salutary effect on abstinence, and to a lesser extent, on drinking intensity.
Conclusions: AA appears to facilitate recovery by mobilizing adaptive changes in the social networks of individuals exhibiting a broad range of impairment. Specifically by reducing involvement with pro-drinking ties and increasing involvement with pro-abstinent ties. These changes may aid recovery by decreasing exposure to alcohol-related cues thereby reducing craving, while simultaneously increasing rewarding social relationships.

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Figure 2a. AA attendance and the % change in both pro-abstinent and pro-drinking network ties from treatment intake to the 9-m (OP sample)

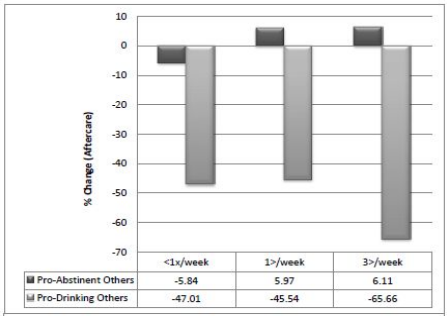


	<1x/week	1>/week	3>/week
Pro-Abstinent Others	1.49	13.96	14.98
Pro-Drinking Others	-22.22	-32.69	-51.96

Source: Kelly et al, 2011, Drug and Alcohol Dependence

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Figure 2b. AA attendance and the % change in both pro-abstinent and pro-drinking network ties from treatment intake to the 9-m (AC sample)



	<1x/week	1>/week	3>/week
Pro-Abstinent Others	-5.84	5.97	6.11
Pro-Drinking Others	-47.01	-45.54	-65.66

Source: Kelly et al, 2011, Drug and Alcohol Dependence

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Substance Abuse

ARTICLES

Alcoholics Anonymous and Reduced Impulsivity: A Novel Mechanism of Change

Daniel M. Blonigen, PhD, Christine Timko, PhD, and Rudolf H. Moos, PhD
Center for Health Care Evaluation, Department of Veterans Affairs Health Care System, Menlo Park, California, USA

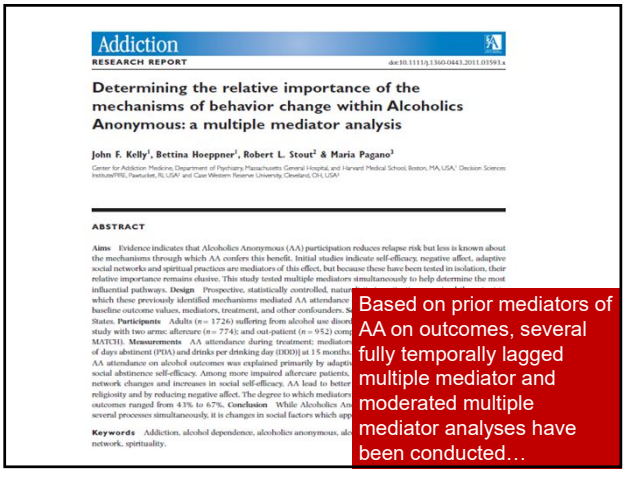
ABSTRACT. Reduced impulsivity is a novel, yet plausible, mechanism of change associated with the salutary effects of Alcoholics Anonymous (AA). Here, the authors review their work on links between AA attendance and reduced impulsivity using a 16-year prospective study of men and women with alcohol use disorders (AUDs) who were initially untreated for their drinking problems. Across the study period, there were significant mean-level decreases in impulsivity, and longer AA duration was associated with reductions in impulsivity. In turn, decreases in impulsivity from baseline to Year 1 were associated with fewer legal problems and better drinking and psychosocial outcomes at Year 1, and better psychosocial functioning at Year 8. Decreases in impulsivity mediated associations between longer AA duration and improvements on several Year 1 outcomes, with the indirect effects conditional on participants' age. Findings are discussed in terms of their potential implications for research on AA and, more broadly, interventions for individuals with AUDs.

Keywords: Alcoholics Anonymous, impulsivity, mechanism of change

Among individuals with alcohol use disorders (AUDs), Alcoholics Anonymous (AA) is linked to improved functioning across a number of domains (1, 2). As the evidence for the effectiveness of AA has accumulated, so too have efforts to identify the mechanisms of change associated with participation in this mutual-help group (3). To our knowledge, however, there have been no efforts to examine links between AA and reductions in *impulsivity*—a dimension of personality marked by deficits in self-control and self-regulation, and tendencies to take risks and respond to stimuli with minimal forethought.

In this article, we discuss the conceptual rationale for reduced impulsivity as a mechanism of change associated with AA, review our research on links between AA and reduced impulsivity, and discuss potential implications of the findings for future research on AA and, more broadly, interventions for individuals with AUD. To guide this work, we modified a conceptual framework (4), which delineates the

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Determining the relative importance of the mechanisms of behavior change within Alcoholics Anonymous: a multiple mediator analysis

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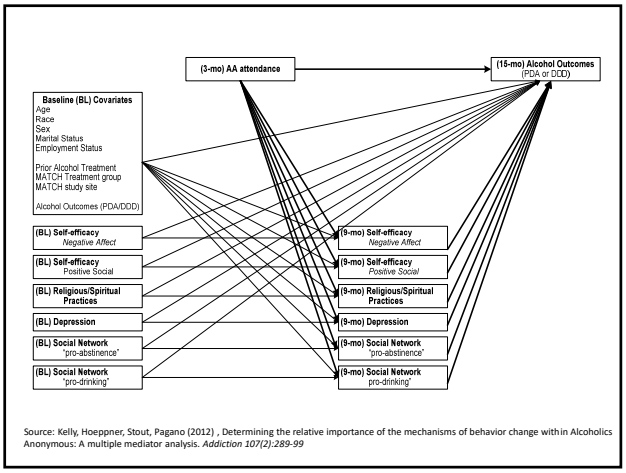
ABSTRACT

Aims Evidence indicates that Alcoholics Anonymous (AA) participation reduces relapse risk but less is known about the mechanisms through which AA confers this benefit. Initial studies indicate self-efficacy, negative affect, adaptive social networks and spiritual practices are mediators of this effect, but because these have been tested in isolation, their relative importance remains elusive. This study tested multiple mediators simultaneously to help determine the most influential pathways. **Design** Prospective, statistically controlled, natur
which these previously identified mechanisms mediated AA attendance
baseline outcome values, mediators, treatment, and other confounders. Se
States. **Participants** Adults (n = 1726) suffering from alcohol use disor
study with two arms: aftercare (n = 774); and out-patient (n = 952) comp
MATCH). **Measurements** AA attendance during treatment; mediator
of days abstinent (PDA) and drinks per drinking day (DDD)] at 15 months.
AA attendance on alcohol outcomes was explained primarily by adaptiv
social abstinence self-efficacy. Among more impaired aftercare patients,
network changes and increases in social self-efficacy. AA lead to better
religiosity and by reducing negative affect. The degree to which mediators
outcomes ranged from 43% to 67%. **Conclusion** While Alcoholics An
several processes simultaneously, it is changes in social factors which app

Keywords Addiction, alcohol dependence, alcoholics anonymous, alc
network, spirituality.

Based on prior mediators of AA on outcomes, several fully temporally lagged multiple mediator and moderated multiple mediator analyses have been conducted…

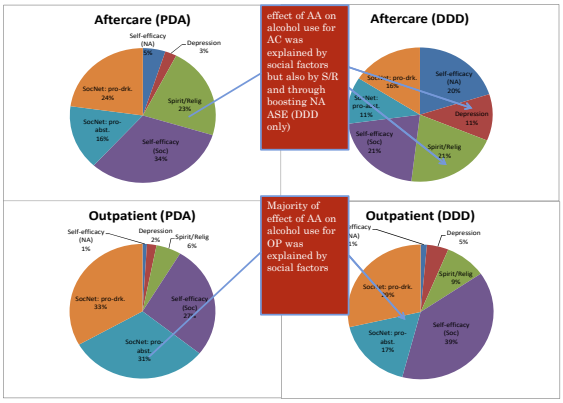
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Source: Kelly, Hoeppner, Stout, Pagano (2012) , Determining the relative importance of the mechanisms of behavior change within Alcoholics Anonymous: A multiple mediator analysis. *Addiction 107(2):289-99*

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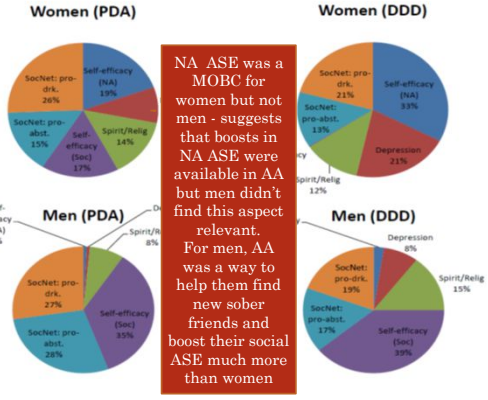
DO MORE AND LESS SEVERELY ALCOHOL DEPENDENT INDIVIDUALS BENEFIT FROM AA IN THE SAME OR DIFFERENT WAYS?



Source: Kelly, Hoeppner, Stout, Pagano (2012) , Determining the relative importance of the mechanisms of behavior change within Alcoholics Anonymous: A multiple mediator analysis. *Addiction 107(2):289-99*

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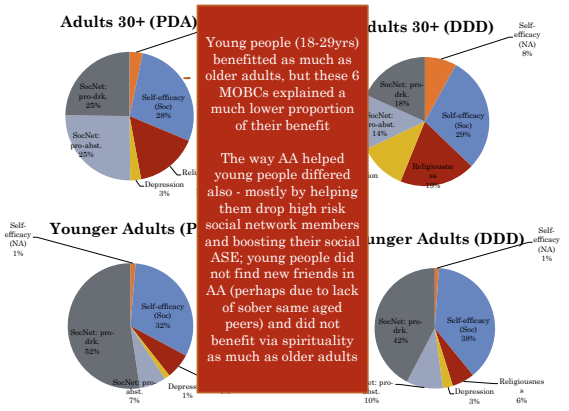
DO MEN AND WOMEN BENEFIT FROM AA IN THE SAME WAYS?



Source: Kelly and Hoeppner (2013) , **Does Alcoholics Anonymous work differently for men and women? A moderated multiple-mediation analysis in a large clinical sample.** ***Drug and Alcohol Dependence***

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Do young Adults benefit as much and in the same ways as older adults



Source: Hoeppner , Hoeppner, Kelly (2014) , **Do young people benefit from AA as much, and in the same ways, as adult aged 30+? A moderated multiple mediation analysis.** ***Drug and Alcohol Dependence.***

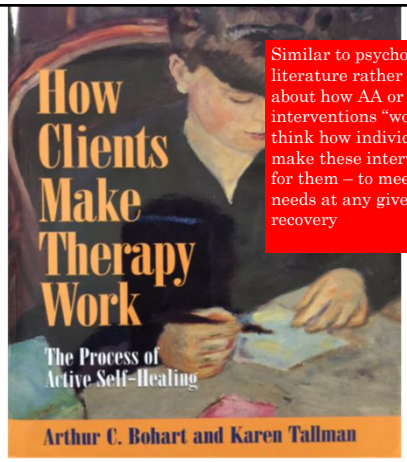
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Moderated-Mechanisms: AA effects Moderated by Severity, Gender, Age…

CONCLUSIONS

- 6 mediators = about 50% of direct effect of AA on drinking (other 50%?)
- Proportion of direct effect explained even lower among young adults; **more research needed on how young people benefit**
- Of note, this MOBC research finds that **the same entity/intervention** (i.e., AA) **produces benefits that differ in nature and magnitude between more severely alcohol involved/impaired and less severely alcohol involved/impaired; men and women; and, young adults and adults 30+**
- Differences may reflect differing needs based on recovery challenges **related to differing symptom profiles, degree of subjective suffering and perceived severity/threat, life-stage based recovery contexts, and gender-based social roles & drinking contexts**

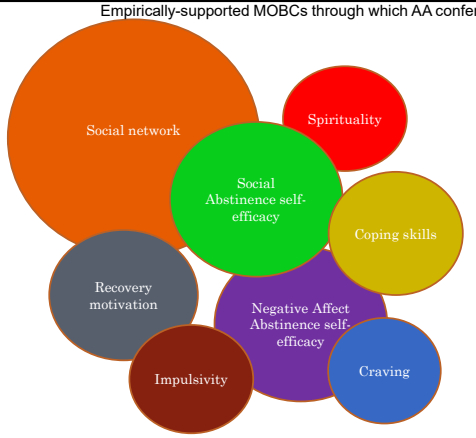
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Similar to psychotherapy literature rather than thinking about how AA or similar interventions "work", better to think how individuals use or make these interventions work for them – to meet most salient needs at any given phase of recovery

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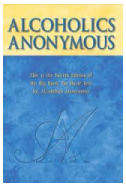
Empirically-supported MOBCs through which AA confers benefit

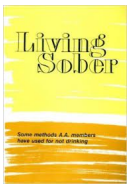


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"Living Sober" vs. "Big Book"

- MOBC research results suggest the way AA works has a closer fit with the pragmatic social, cognitive, and behavioral experiences of how its members stay sober documented in its later publications (*Living Sober*, 1975) than with the *Big Book* (1935; 2001), which was written in 1935 and based on relatively little accumulation of sober experience (i.e., less than one hundred members, most with short lengths of sobriety)





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AA/TSF Findings Summary

For alcohol-related outcomes other than complete abstinence, AA and professionally-delivered TSF interventions are at least as effective as other well-established treatments.

For abstinence outcomes, AA and TSF interventions are as effective or better than other well-established treatments.

Implementing AA and TSF also appear to produce substantial health care cost savings.

Mediational analyses demonstrate clinically delivered TSF produces benefits through fostering AA participation during/following end of formal treatment. MOBC research- AA mobilizes therapeutic mechanisms mobilized by formal treatment but does so over long-term, for free, in communities in which people live

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