

The Science on the Effectiveness and Mechanisms of AA and 12-step Treatments

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Overview

- SUDs: massive health, social, and economic burden
- Mutual-help organizations(MHOs) can help offset burden
- MHOs work for many different types of individuals and produce additional benefit over and above formal treatment
- MHOs work through mechanisms similar to those operating in formal treatment
- MHOs can reduce costs by reducing patients' reliance on professional services without any detriment to outcomes, and may even enhance outcomes
- Empirically-supported clinical interventions can increase patients' participation in MHOs and enhance treatment outcomes

Broadening
the Base of
Treatment for

Alcohol Problems

INSTITUTE OF MEDICINE



Research on Alcoholics Anonymous

OPPORTUNITIES AND ALTERNATIVES

Edited by
Barbara S. McCready and
William R. Miller

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TSF Delivery Modes

Stand alone
Independent therapy



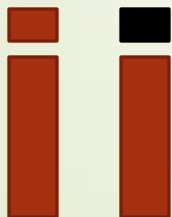
Integrated into an existing
therapy



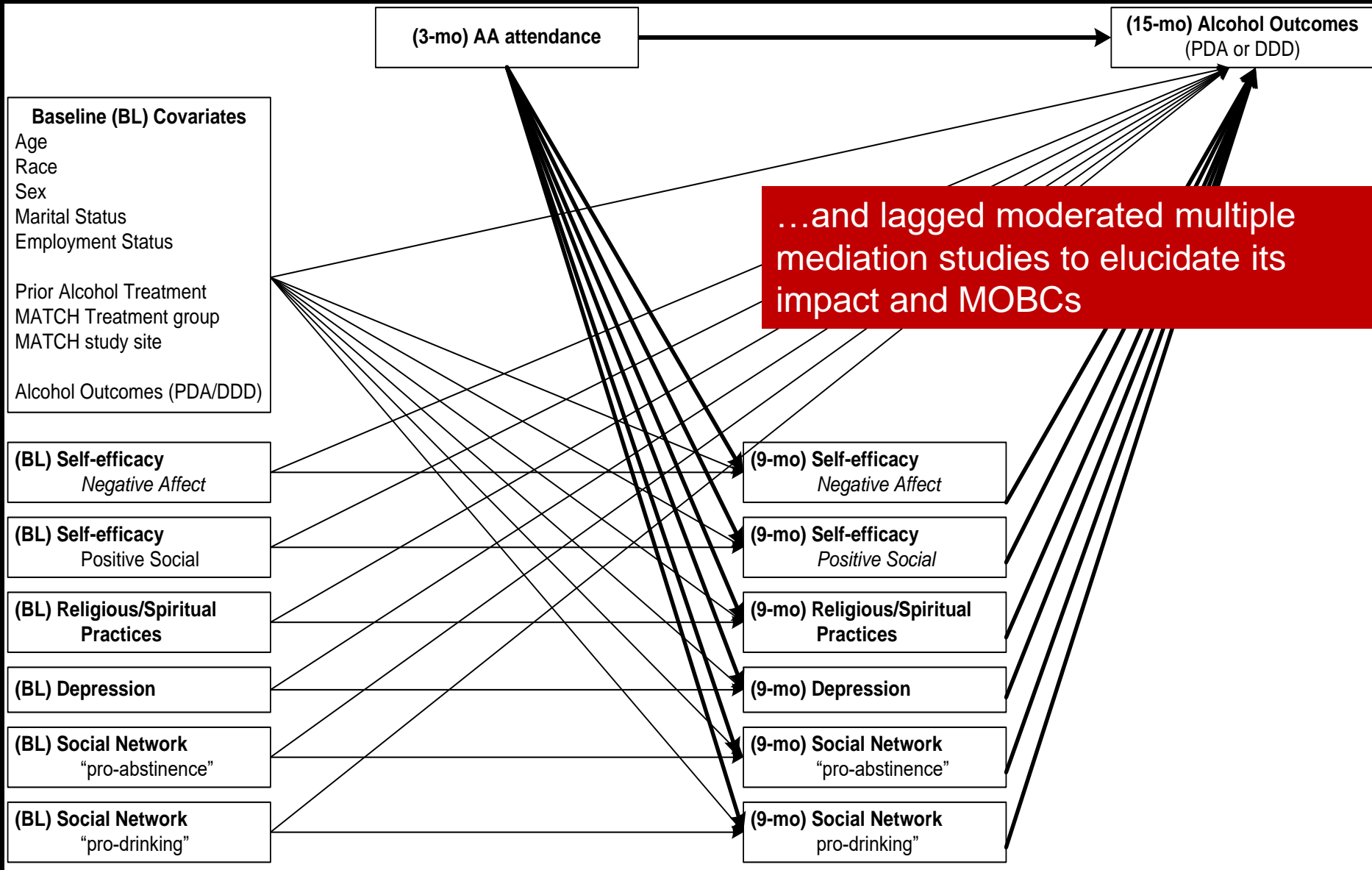
Component of a treatment
package (e.g., an
additional group)



As Modular appendage
linkage component



In past 25 years, AA research has gone from contemporaneous correlational research to rigorous RCTs and ...



Source: Kelly, Hoepfner, 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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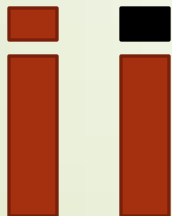
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Facilitating involvement in Alcoholics Anonymous during out-patient treatment: a randomized clinical trial

Kimberly S. Walitzer, Kurt H. Dermen & Christopher Barrick

Research Institute on Addictions/University at Buffalo, The State University of New York, Buffalo, NY, USA

Addiction (1998) 93(9), 1313–1333

RESEARCH REPORT

Network support for drinking Anonymous and long-term

RICHARD LONGABAUGH¹, PHILIP W. WIRTZ²,
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²*George Washington University, Washington, DC,* ³*University of Wisconsin-Milwaukee,*

Center for Addiction & Behavioral Health Research, Milwaukee, WI, ⁴*Brown University and
Butler Hospital, Center for Alcohol & Addiction Studies, Providence, RI, USA*

Abstract

Aims. (1) To examine the matching hypothesis that Twelve Step Facilitation Therapy (TSF) is more

TSF often produces significantly better outcomes relative to active comparison conditions (e.g., CBT)

Although TSF is not “AA”, its beneficial effect is explained by AA involvement post-treatment.



Estimating the Efficacy of Alcoholics Anonymous without Self-Selection Bias: An Instrumental Variables Re-Analysis of Randomized Clinical Trials

Keith Humphreys, Janet C. Blodgett, and Todd H. Wagner

Background: Observational studies of Alcoholics Anonymous (AA) involvement are subject to self-selection bias because individuals choose whether or not to attend AA. We therefore employed an innovative statistical technique to derive unbiased estimates of AA impact.

Methods: Six data sets from 5 National Institutes of Health (NIH) independent parallel arms) of AA facilitation interventions were analyzed using instrumental variables models. Alcohol-dependent individuals in one of the data sets were used as the rest of sample ($n = 1,582$ individuals pooled from 5 data sets). Randomization itself was used as the instrumental variable.

Results: Randomization was a good instrument in both the 5 data sets. AA attendance that could not be attributed to self-selection bias) for analysis, increased AA attendance that was attributable to self-selection bias) was effective at increasing days of abstinence at 3-month follow-up ($B = 0.42, p = 0.04$). However, in the remaining data sets, AA attendance was much higher, further increases in AA involvement caused by the intervention did not affect drinking outcome.

Conclusions: For most individuals seeking help for alcohol use disorder, AA leads to short- and long-term decreases in alcohol consumption. However, for populations with high preexisting AA involvement, AA attendance may have little impact.

Key Words: Alcoholics Anonymous, Self-Help, Mutual Support, Treatment Outcome.

OBSERVATIONAL RESEARCH LONG ago established that Alcoholics Anonymous (AA) involvement is associated with better outcomes on alcohol-related, psychological, and social measures (Emrick et al., 1993; Humphreys, 2004; Tonigan et al., 1996). Researchers and clinicians hotly debated for many years whether this correlation reflected AA's effectiveness or was merely an artifact of self-selection (e.g., those who attend AA are more motivated to change). In the past decade, the former explanation received a major boost as a series of scientific teams conducted randomized clinical trials in which professionally provided AA-involvement facilitation interventions were

shown to be effective (Humphreys et al., 2009). However, the possibility of self-selection bias in observational research on the effectiveness of AA has long been a concern. Self-selection bias can lead to spurious associations between AA involvement and drinking outcomes. The first randomized clinical trial of AA involvement facilitation interventions was conducted by the VA Medical Center in Palo Alto, California (Humphreys et al., 2009).

Instrumental variables (IV) models have been used to estimate the causal impact of AA involvement on drinking outcomes. IV models employ a random variable (the instrument) that is correlated with AA involvement but uncorrelated with drinking outcomes. IV models have been used to estimate the causal impact of AA involvement on drinking outcomes in a number of studies (Humphreys et al., 2009; Tonigan et al., 2009; Tonigan et al., 2010; Tonigan et al., 2011; Tonigan et al., 2012; Tonigan et al., 2013; Tonigan et al., 2014; Tonigan et al., 2015; Tonigan et al., 2016; Tonigan et al., 2017; Tonigan et al., 2018; Tonigan et al., 2019; Tonigan et al., 2020; Tonigan et al., 2021; Tonigan et al., 2022; Tonigan et al., 2023; Tonigan et al., 2024; Tonigan et al., 2025).

From the Center for Innovation to Implementation (KH, JCB, THW), VA Palo Alto Health Care System, Menlo Park, California; Department of Psychiatry and Behavioral Sciences (KH, JCB, THW) Stanford University, Palo Alto, California; and C12i, VAPAHCs (152-001-0001), VA Medical Center, Palo Alto, California.

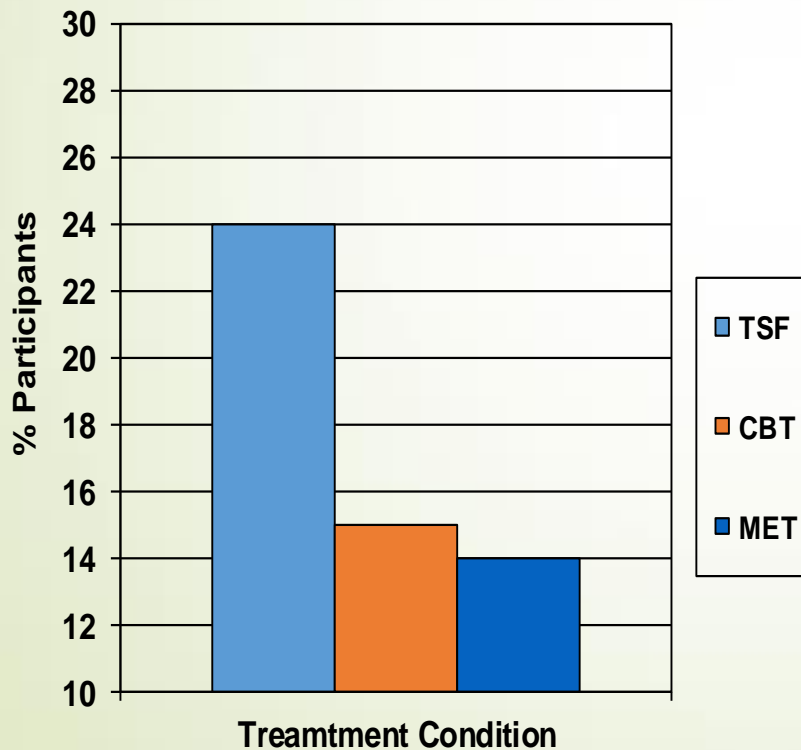
Also, state of the art instrumental variables analyses, as well as propensity score matching (Ye and Kaskutas, 2013) that help to remove self-selection biases, indicate AA has a causal impact on enhancing abstinence and remission rates.

Linkage to AA can lead to much higher rates of full sustained remission

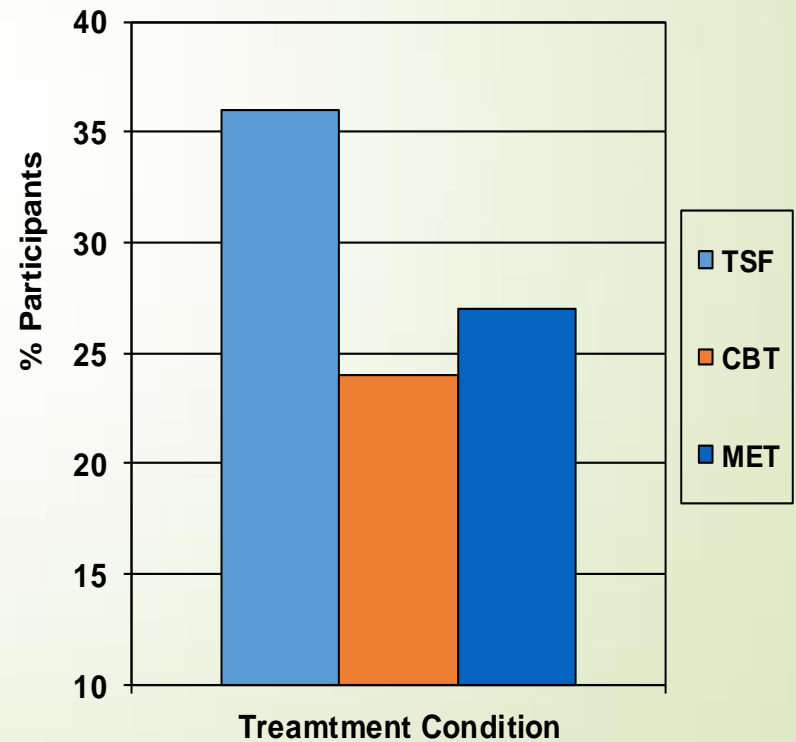
(Project MATCH, 1997)

TSF treatment can lead to much higher rates of full sustained remission

Continuous Abstinence Rates during year following treatment (4-15 Months)



Continuous Abstinence Rates past 90 days- 3 Years



COMPILATION OF PATIENT PROTECTION
AND AFFORDABLE CARE ACT

[As Amended Through May 1, 2010]

INCLUDING

PATIENT PROTECTION AND AFFORDABLE CARE ACT
HEALTH-RELATED PORTIONS OF THE HEALTH CARE AND
EDUCATION RECONCILIATION ACT OF 2010

PREPARED BY THE
Office of the Legislative Counsel
FOR THE USE OF THE
U.S. HOUSE OF REPRESENTATIVES



MAY 2010

APPROVED

MAR 23 2010

Barack Obama

Can Encouraging Substance Abuse Patients to Participate in Self-Help Groups Reduce Demand for Health Care? A Quasi-Experimental Study

Keith Humphreys and Rudolf Moos

Background: Twelve-step-oriented inpatient treatment programs emphasize 12-step treatment approaches and the importance of ongoing attendance at 12-step self-help groups more than do cognitive-behavioral (CB) inpatient treatment programs. This study evaluated whether this difference in therapeutic approach leads patients who are treated in 12-step programs to rely less on professionally provided services and more on self-help groups after discharge, thereby reducing long-term health care costs.

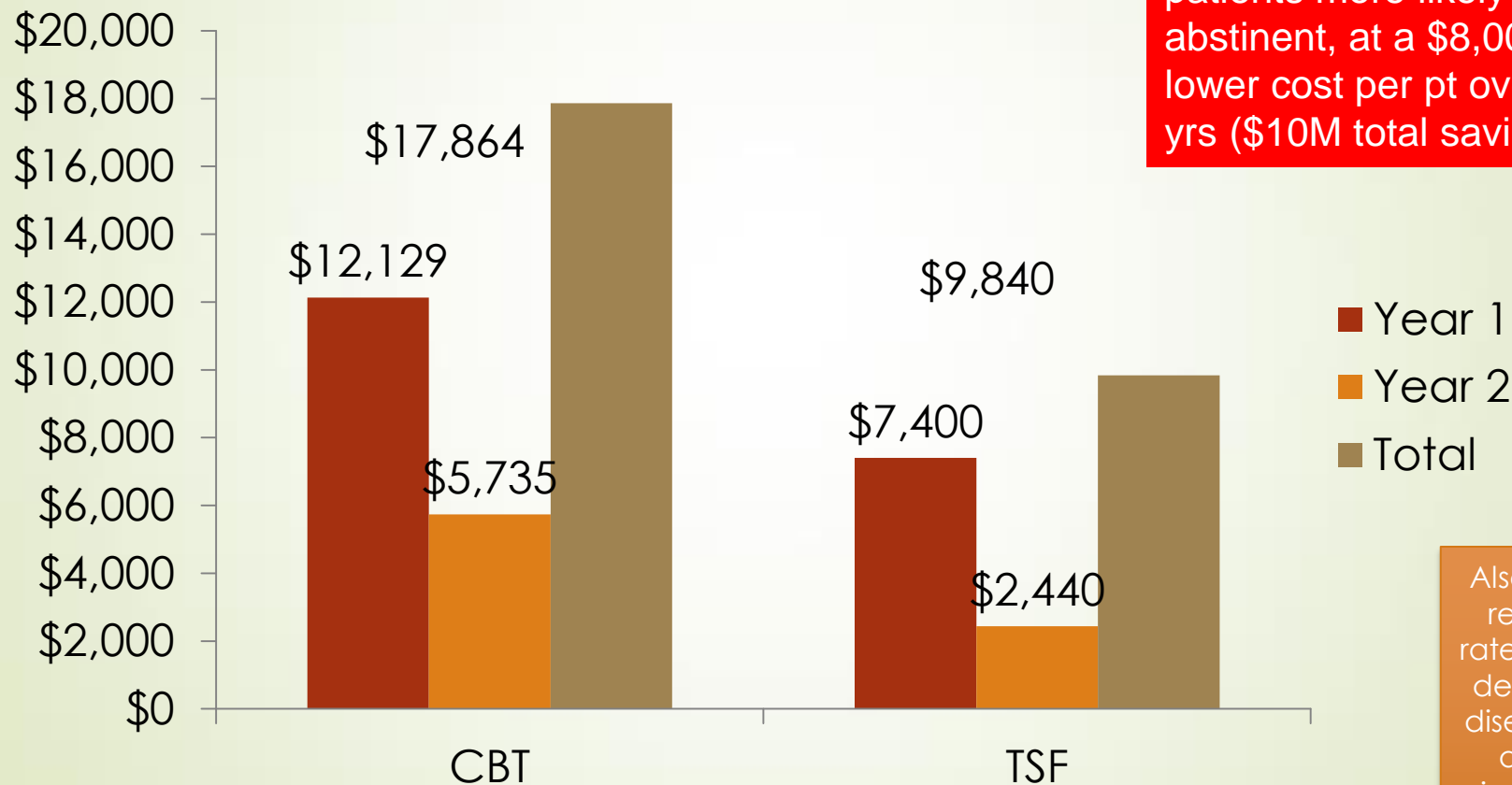
Methods: A prospective, quasi-experimental comparison of 12-step-based ($N = 5$) and cognitive-behavioral ($n = 5$) inpatient treatment programs was conducted. These treatments were compared on the degree to which their patients participated in self-help groups, used outpatient and inpatient mental health services, and experienced positive outcomes (e.g., abstinence) in the year following discharge. Using a larger sample from an ongoing research project, 887 male substance-dependent patients from each type of treatment program were matched on pre-intake health care costs ($N = 1774$). At baseline and 1-year follow-up, patients' involvement in self-help groups (e.g., Alcoholics Anonymous), utilization and costs of mental health services, and clinical outcomes were assessed.

Results: Compared with patients treated in CB programs, patients treated in 12-step programs had significantly greater involvement in self-help groups at follow-up. In contrast, patients treated in CB programs averaged almost twice as many outpatient continuing care visits after discharge (22.5 visits) as patients treated in 12-step treatment programs (13.1 visits), and also received significantly more days of inpatient care (17.0 days in CB versus 10.5 in 12-step), resulting in 64% higher annual costs in CB programs (\$4729/patient, $p < 0.001$). Psychiatric and substance abuse outcomes were comparable across treatments, except that 12-step patients had higher rates of abstinence at follow-up (45.7% versus 36.2% for patients from CB programs, $p < 0.001$).

Conclusions: Professional treatment programs that emphasize self-help approaches increase their patients' reliance on cost-free self-help groups and thereby lower subsequent health care costs. Such programs therefore represent a cost-effective approach to promoting recovery from substance abuse.

Key Words: Aftercare, Self-Help Groups, Health Care Cost-Offsets, Alcoholics Anonymous, Inpatient Treatment.

HEALTH CARE COST OFFSET CBT VS 12-STEP RESIDENTIAL TREATMENT



Compared to CBT-treated patients, 12-step treated patients more likely to be abstinent, at a \$8,000 lower cost per pt over 2 yrs (\$10M total savings)

Also, higher remission rates, means decreased disease and deaths, increased quality of life for sufferers and their families

Does AA “cause” better outcomes or is AA participation an outcome of better prognosis?

The Bradford Hill Criteria

1: Strength of Association. The stronger the relationship between the independent variable and the dependent variable, the less likely it is that the relationship is due to an extraneous variable.

2: Temporality. It is logically necessary that the cause precede the effect.

3: Consistency. Multiple observations in different circumstances and with different researchers.

4: Theoretical Plausibility. It is consistent with current biological and theoretical basis for such a connection.

5: Coherence. A cause-and-effect relationship should not conflict with what is known about the disease and competing theories or rival hypotheses, or other knowledge.

6: Specificity in the causes. In the absence of other causes, showing that an outcome is best predicted by a specific claim.

7: Dose Response Relationship. A relationship between the independent variable (i.e., the independent variable) and the dependent variable (i.e., the dependent variable).

8: Experimental Evidence. Any relationship that can be supported by experimental inference more plausible.

9: Analogy. Sometimes a common relationship in a similar area.

- Using accepted scientific standards (Bradford Hill criteria) and the most rigorous scientific methods (i.e., RCTs, instrumental variables analysis, PS matching), evidence indicates causal therapeutic benefit of AA
- The one exception is “specificity” (e.g., other interventions could also cause these benefits)
- But given AA is available free of charge in practically every US community and that an intervention’s “Impact” is a product of = reach x effectiveness (Glasgow et al, 2003), AA can be considered a clinical and public health ally in ameliorating the prodigious burden of disease attributable to alcohol addiction

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Drug and Alcohol Concerns

Public health

- #1 public health problem (Institute for Health Policy, 2001); notably youth (CASA, 2011)
- Globally, 3.3. million deaths annually from alcohol; 300,000 from illicit drugs

Financial

- \$600billion in US each year (lost productivity, criminal justice, medical costs)
- Excessive alcohol consumption costs society \$2 per drink

Mortality

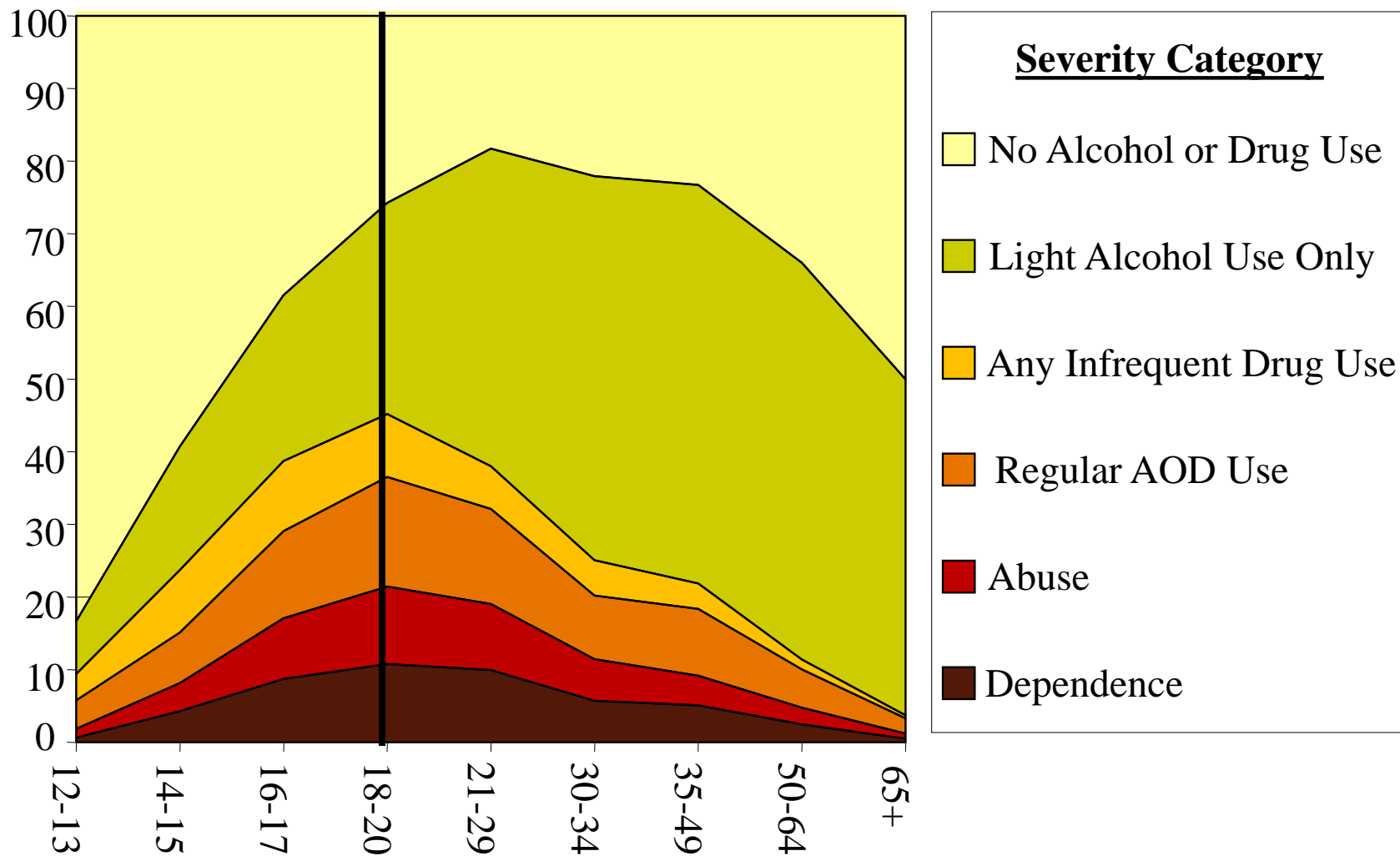
- SUD leading cause of mortality -alcohol leading risk factor among males 15-59 yrs worldwide
- Opiate overdose – leading cause of accidental death nationwide

Prevention

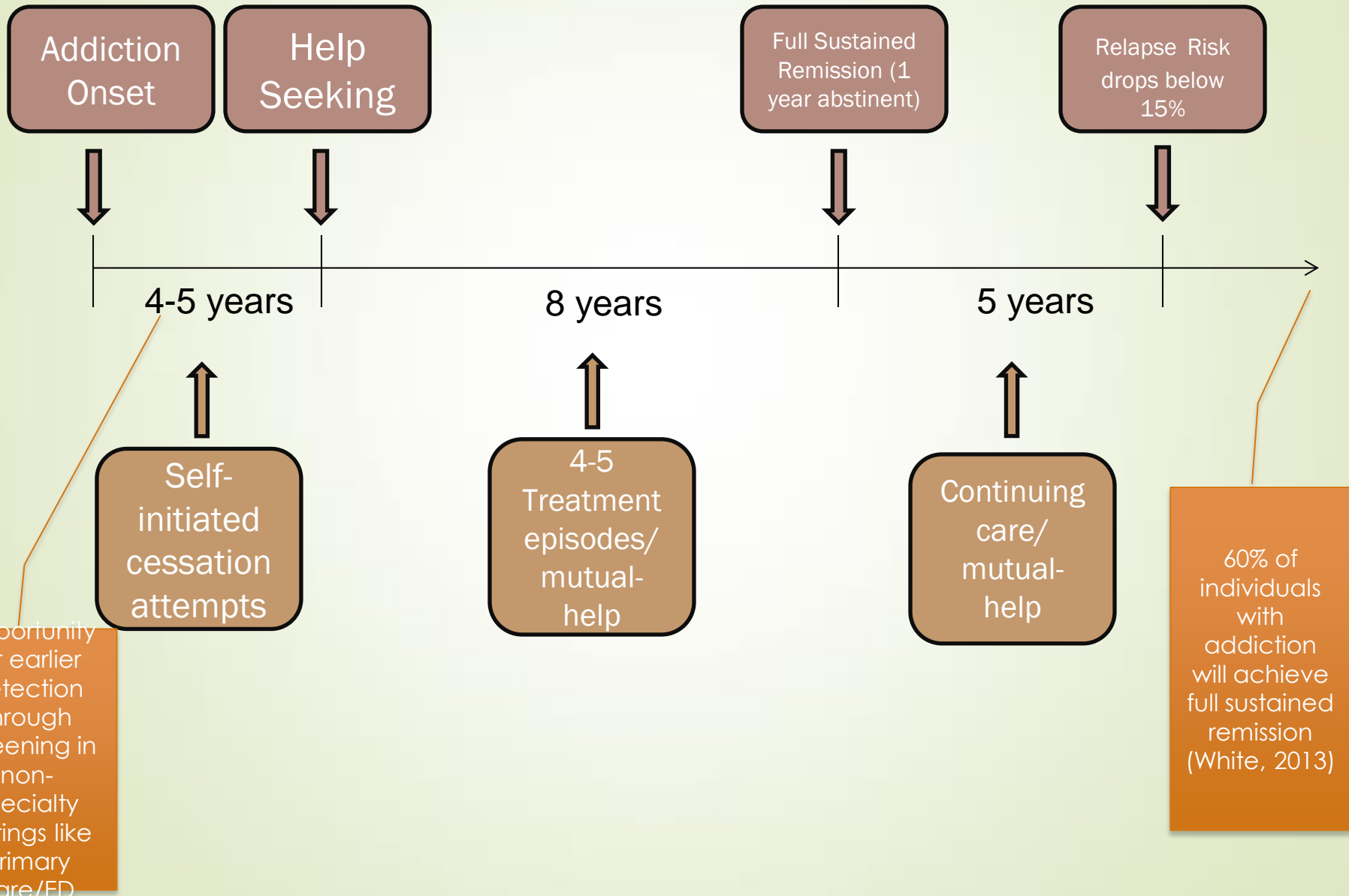
- Onset of long-term problems occur during adolescence/young adulthood
- 90% adults with dependence start using before age 18
- 50% of adults start using before age 15

Alcohol and other drug use US population

National Survey on Drug Use and Health (NSDUH) Age Groups

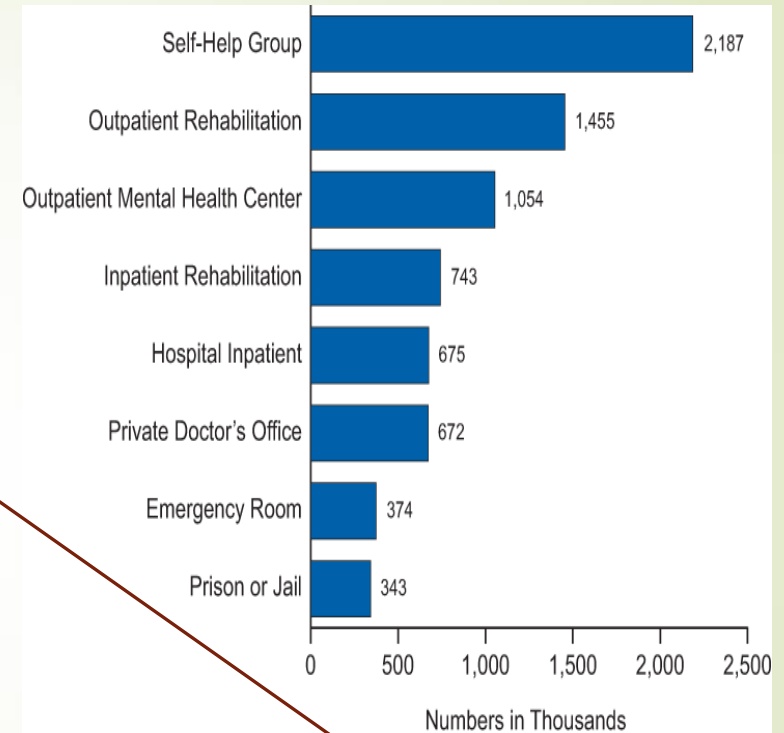


For more severely dependent individuals ...
course of dependence and achievement of stable recovery
can take a long time ...



Societal Response to SUD and related problems. **Why have MHO's grown despite better more effective professional treatments**

- While increases in quality and quantity of SUD treatment over past 40yrs....
- ...professional resources alone cannot cope; stigma and cost present further barriers to formal tx access
- Individual themselves recognize a need for greater, flexible, ongoing support
- In tacit recognition, most societies seen increases in MHOs during past 75 yrs (Kelly & Yeterian, 2008)



“The burden of alcohol problems is a heavy one; the specialized treatment sector is necessarily limited in size and quite costly. The committee believes that only a shared effort can succeed in lifting this burden to any significant degree” (IOM, 1990)

Potential Advantages of Community Mutual-help

- ▶ Cost-effective -free; attend as intensively, as long as desired
- ▶ Focused on addiction recovery over the long haul
- ▶ Widely available, easily accessible, flexible
- ▶ Access to fellowship/broad support network
- ▶ Entry threshold (no paperwork, insurance); anonymous (stigma)
- ▶ Adaptive community based system that is responsive to undulating relapse risk

Substance Focused Mutual-help Groups

Name	Year of Origin	Number of groups in U.S.	Location of groups in U.S.	Evidence base* (0-3)
Alcoholics Anonymous (AA)	1935	52,651	all 50 States	1, 2, 3
Narcotics Anonymous (NA)	1940s	Approx. 15,000	all 50 States	1, 2
Cocaine Anonymous (CA)	1982	Approx. 2000 groups	most States; 6 online meetings at www.ca-online.org	0
Methadone Anonymous (MA)	1990s	Approx. 100 groups	25 States; online meetings at http://methadone-anonymous.org/chat.html	1, 2
Marijuana Anonymous (MA)	1989	Approx. 200 groups	24 States; online meetings at www.ma-online.org	0
Rational Recovery (RR)	1988	No group meetings or mutual helping; emphasis is on <i>individual</i> control and responsibility	-----	1, 2
Self-Management and Recovery Training (S.M.A.R.T. Recovery)	1994	Approx. 250 groups	40 States; 19 online meetings at www.smartrecovery.org/meetings/olschedule.htm	1, 3
Secular Organization for Sobriety, a.k.a. Save Ourselves (SOS)	1986	Approx. 480 groups	all 50 States; Online chat at www.sossobriety.org/sos/chat.htm	1
Women for Sobriety (WFS)	1976	150-300 groups	Online meetings at http://groups.msn.com/WomenforSobriety	1
Moderation Management (MM)	1994	Approx. 16 face-to-face meetings	12 States; Most meetings are online at www.angelfire.com/trek/mmchat/ ;	1

*0= None 1=Descriptive studies only 2 = Observational (correlational, longitudinal) 3= Experimental (random assignment, controlled).

Table 2. Dual-Diagnosis Focused Mutual-help Groups

Name	Year of Origin	Number of groups in U.S.	Location of groups in U.S.
Double Trouble in Recovery (DTR)	1989	200	Highest number of groups in NY, GA, CA, CO, NM, FL
Dual Recovery Anonymous (DRA)	1989	345	Highest number of groups in CA, OH, PA, MA
Dual Disorders Anonymous	1982	48	28 in IL
Dual Diagnosis Anonymous	(DDA)	56	38 in CA

Source: Kelly & Yeterian, 2008)

Table 3. Non-Substance Focused Addictive Behavior Mutual-help Groups

Name	Year of Origin	Number of groups in U.S.	Location of groups in U.S.
Gamblers Anonymous (GA)	1957	Approx. 2000 chapters	49 States
Sex Addicts Anonymous (SAA)	1977	Approx. 700 meetings	most States; Online meetings at www.sexaa.org/online.htm ; Telephone meetings
Sex and Love Addicts Anonymous (SLAA)	1976	Approx. 1320 groups <i>worldwide</i>	(including in all 50 States), Online meetings at www.slaafws.org/online/onlinemeet.html ; Regional teleconference calls
Overeaters Anonymous (OA)	1960	Approx. thousands of meetings	all 50 States; Numerous online (www.oa.org/pdf/OnlineMeetingsList.pdf) and telephone meetings (www.oa.org/pdf/phone_mtgs.pdf)

Source: Kelly & Yeterian, 2008)

What groups do patients attend?

	Yr 1		Yr 2		Yr 3	
	% (n)		% (n)		% (n)	
	Total	Women*	Total	Women	Total	Women
Any Addiction Mutual-help Organization	79% (188)	29% (54)	54% (129)	30% (38)	54% (127)	27% (34)
Alcoholics Anonymous (AA)	76% (180)	28% (50)	52% (123)	29% (35)	52% (123)	26% (32)
Narcotics Anonymous (NA)	7% (16)	25% (4)	3% (6)	33% (2)	4% (9)	33% (3)
SMART Recovery	3% (7)	57% (4)	2% (5)	60% (3)	1% (3)	33% (1)
Rational Recovery (RR)	1% (2)	50% (1)	.5% (1)	0% (0)	.5% (1)	100% (1)
Women for Sobriety (WFS)	2% (4)	100% (4)	3% (6)	100% (6)	0% (0)	-
Other (e.g., church group)	0% (0)	-	.5% (1)	0% (0)	.5% (1)	0% (0)
12-step only (e.g., AA, NA)	74% (176)	26% (46)	50% (119)	26% (31)	52% (123)	26% (32)
Non-12-step only (e.g., SMART)	3% (7)	57% (4)	2% (5)	60% (3)	2% (4)	50% (2)

Source: Kelly, Stout, Zywiak et al, 2006, *Alcoholism: Clinical and Experimental Research*

Broadening the Base of Addiction Mutual-Help Organizations

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WILLIAM L. WHITE

Research Division, Chestnut Health Systems, Punta Gorda, Florida, USA

Peer-led mutual-help organizations addressing substance use disorder (SUD) and related problems have had a long history in the United States. The modern epoch of addiction mutual help began in the postprohibition era of the 1930s with the birth of Alcoholics Anonymous (AA). Growing from 2 members to 2 million members, AA's reach and influence has drawn much public health attention as well as increasingly rigorous scientific investigation into its benefits and mechanisms. In turn, AA's growth and success have spurred the development of myriad additional mutual-help organizations. These alternatives may confer similar benefits to those found in studies of AA but have received only peripheral attention. Due to the prodigious economic, social, and medical burden attributable to substance-related problems and the diverse experiences and preferences of those attempting to recover from SUD, there is potentially immense value in societies maintaining and supporting the growth of a diverse array of mutual-help options. This article presents a concise overview of the origins, size, and state of the science on several of the largest of these alternative additional mutual-help organizations in an attempt to raise further awareness and help broaden the base of addiction mutual help.

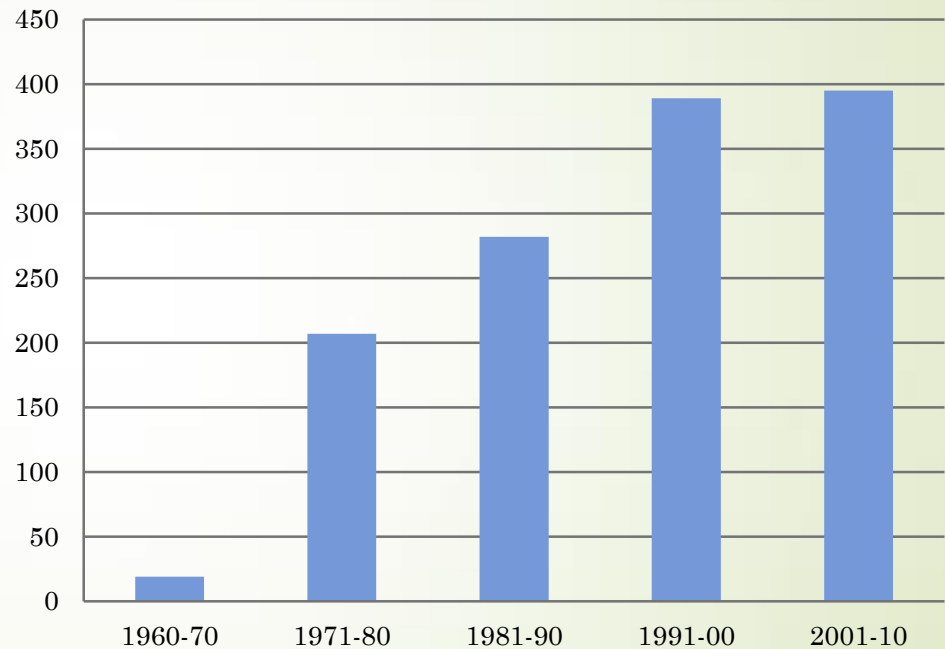
Overview

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12-step Research- Recent History

- ▶ AA most commonly sought source of help for alcohol problems in the US (SAMHSA, 2010; Weisner et al, 2005).
- ▶ Given public health significance, Institute of Medicine (IOM, 1990) called for AA research.
- ▶ State of science summarized and further research opportunities outlined (McCrary and Miller, 1993)
- ▶ Past 20 yrs significant increase in scientific interest and rigor focused on AA.

**Number of Publications on AA and NA
1960-2010**



Findings from meta-analyses

- Emrick et al. 1993 - 107 studies. AA attendance and involvement modest beneficial effect on drinking behavior
- Tonigan et al., 1996 - 74 studies. Examined moderators of effectiveness (i.e. outpatient vs. inpatient; study quality)
 - ⇒ Studies generally, were “methodological poor” and underpowered
- Kownacki & Shadish, 1999 – 21 studies. Examined controlled trials only
 - Randomization confounded with coerced status (justice system required)
 - Coerced individuals fared worse than individuals in other treatment or no treatment
 - Coerced individuals may have better outcomes if coerced into other kinds of treatment
 - Found support for 12-step-based tx and non-coerced AA attendance

Ferri, Amato, Davoli (2006) (Cochrane Review)

- ▶ Attempted to examine RCTs of AA or TSF
- ▶ 8 trials involving 3417 people were included.
- ▶ Findings:
 - ▶ AA may help patients to accept treatment and keep patients in treatment more than alternative treatments
 - ▶ AA had similar retention rates
 - ▶ 3 studies compared AA combined with other interventions against other treatments and found few differences in the amount of drinks and percentage of drinking days
 - ▶ **Peer-led AA participation and TSF found to be as effective as other comparison professionally-delivered interventions to which it was compared**

For whom are mutual-help groups particularly helpful / not helpful?

- Clinical concerns member-group fit with 12-step mutual-help organizations.
 - 1. Dual-diagnosed (DD)
 - Medications
 - Clinical syndromes vs. “not working the program”
 - 2. Non-religious people
 - Barriers to 12-step
 - 3. Women
 - “Powerlessness”
 - 4. Young People
 - Developmental barriers

Overview

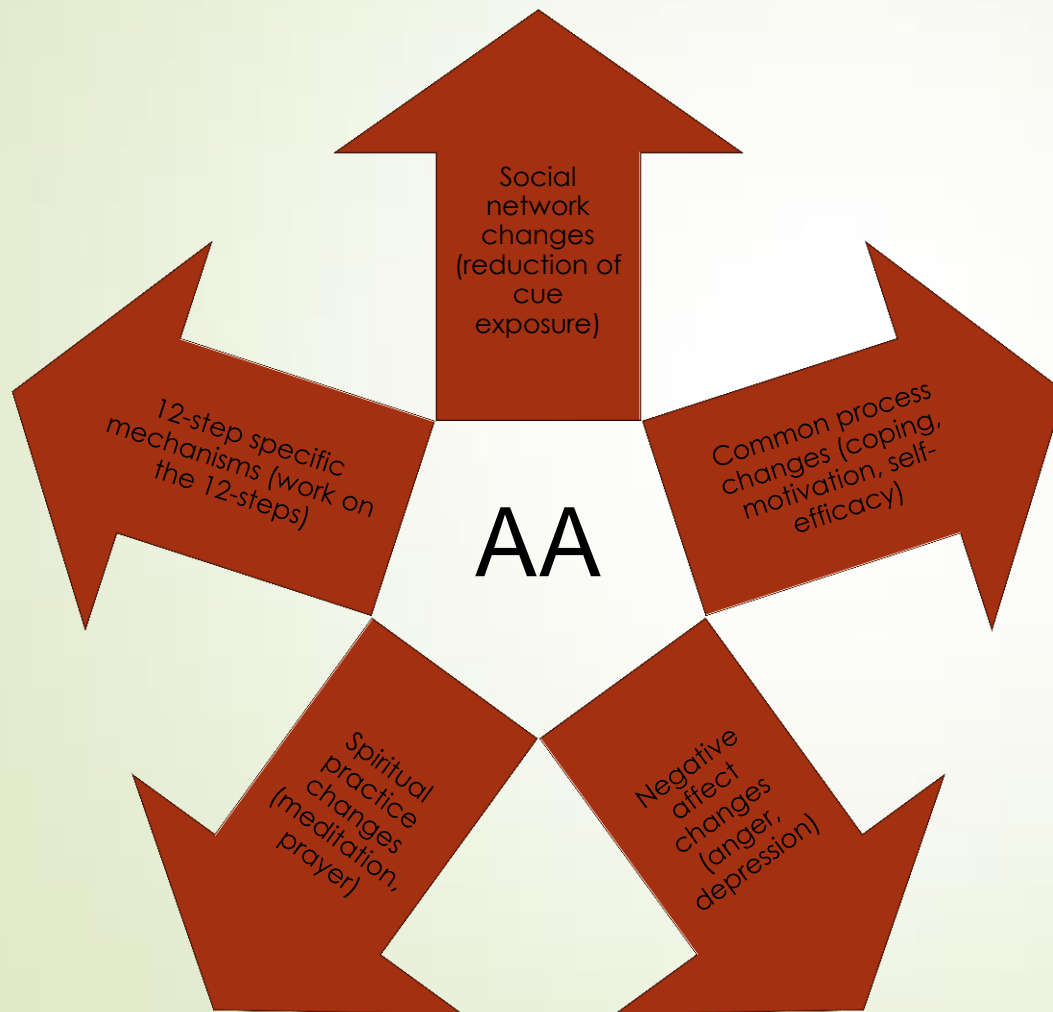
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Curative factors of group therapy and... of MHOs?

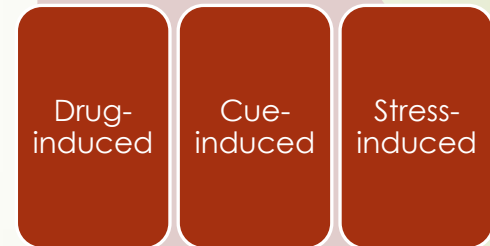
- **Universality**
- **Altruism**
- **Instillation of hope**
- **Imparting information**
- **Recapitulation of the primary family experience**
- **Development of socializing techniques**
- **Imitative behaviour**
- **Cohesiveness**
- **Existential factors**
- **Catharsis**
- **Interpersonal learning**
- **Self-understanding**

(Yalom, 1995)

How do mutual-help groups enhance outcomes? Possible mechanisms



Paths to Relapse...



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

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& ROBERT LAUREN STOUT³

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(Received 9 January 2009; accepted 18 January 2009)

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

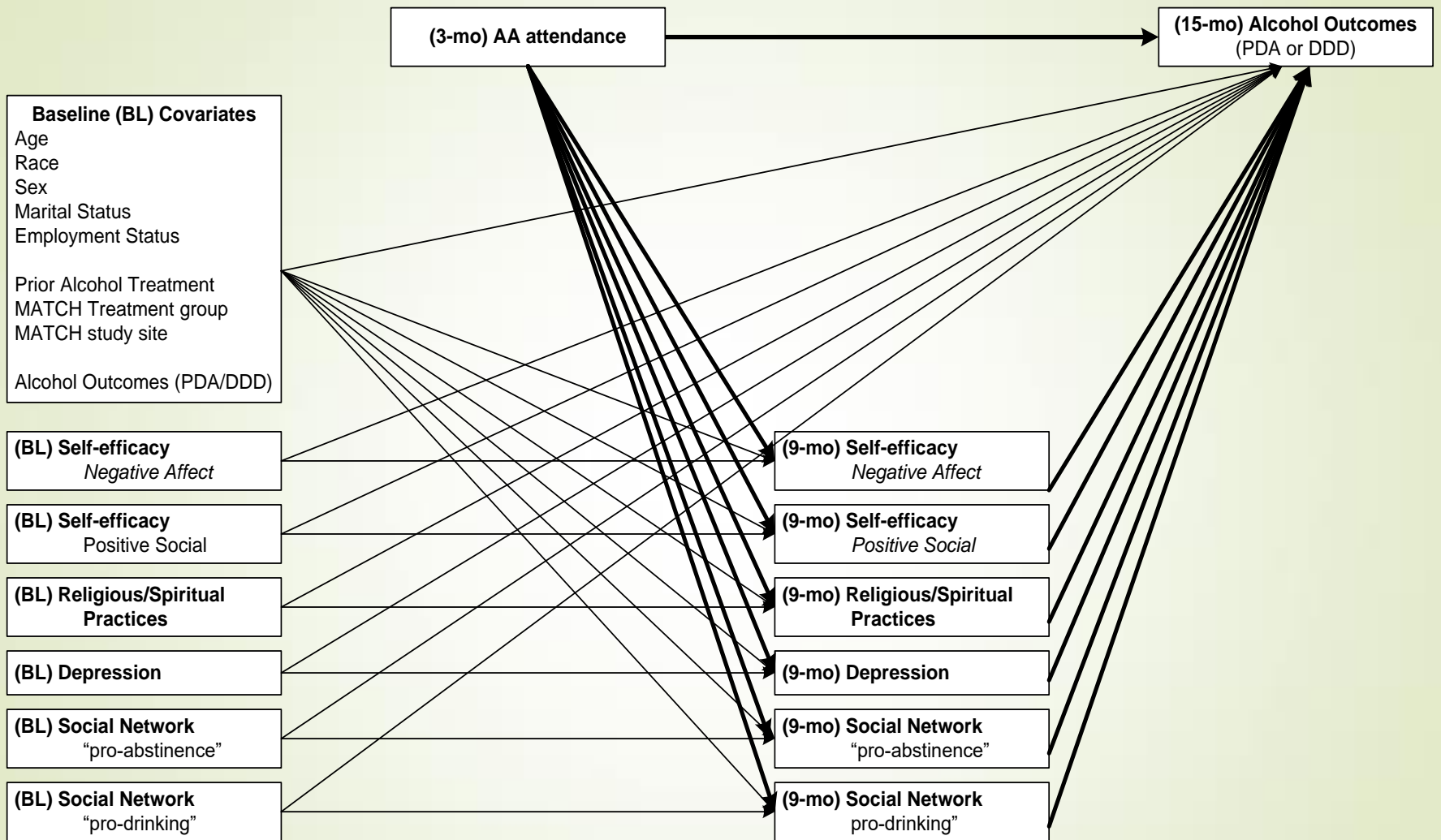
John F. Kelly¹, Bettina Hoepfner¹, Robert L. Stout² & Maria Pagano³

Center for Addiction Medicine, Department of Psychiatry, Massachusetts General Hospital, and Harvard Medical School, Boston, MA, USA,¹ Decision Sciences Institute/PIRE, Pawtucket, RI, USA² and Case Western Reserve University, Cleveland, OH, USA³

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, naturalistic investigation examined the extent to which these previously identified mechanisms mediated AA attendance effects on alcohol outcomes controlling for baseline outcome values, mediators, treatment, and other confounders. **Setting** Nine clinical sites within the United States. **Participants** Adults ($n = 1726$) suffering from alcohol use disorder (AUD) initially enrolled in a randomized study with two arms: aftercare ($n = 774$); and out-patient ($n = 952$) comparing three out-patient treatments (Project MATCH). **Measurements** AA attendance during treatment; mediators at 9 months; and outcomes [percentage of days abstinent (PDA) and drinks per drinking day (DDD)] at 15 months. **Findings** Among out-patients the effect of AA attendance on alcohol outcomes was explained primarily by adaptive social network changes and increases in social abstinence self-efficacy. Among more impaired aftercare patients, in addition to mediation through adaptive network changes and increases in social self-efficacy, AA lead to better outcomes through increasing spirituality/religiosity and by reducing negative affect. The degree to which mediators explained the relationship between AA and outcomes ranged from 43% to 67%. **Conclusion** While Alcoholics Anonymous facilitates recovery by mobilizing several processes simultaneously, it is changes in social factors which appear to be of primary importance.

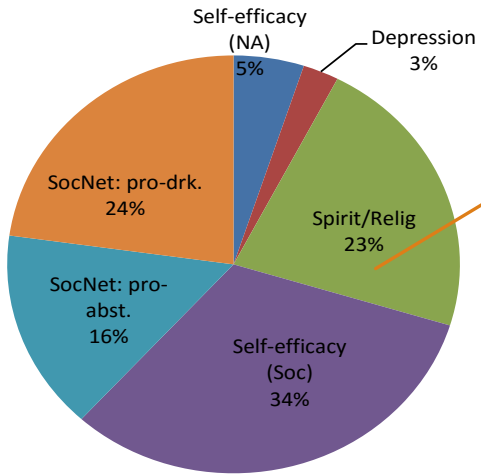
Keywords Addiction, alcohol dependence, alcoholics anonymous, alcoholism, depression, self-help groups, social network, spirituality.



Source: Kelly, Hoepfner, 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

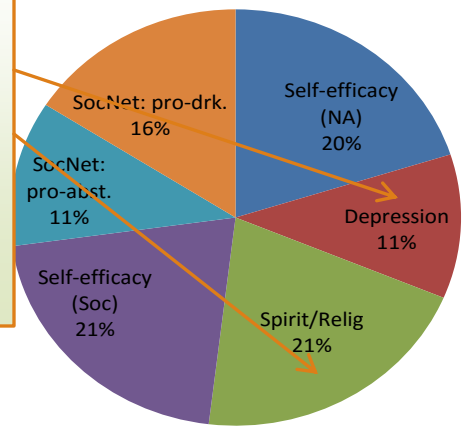
Do more and less severely alcohol dependent individuals benefit from AA in the same or different ways?

Aftercare (PDA)

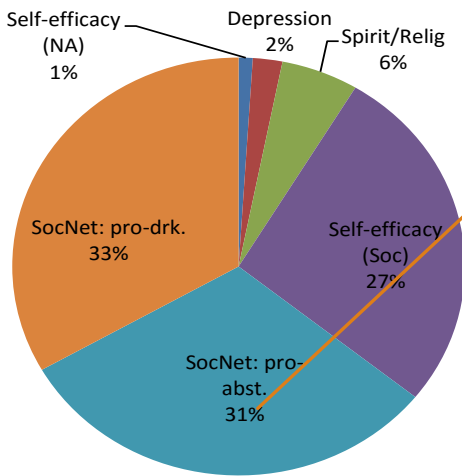


effect of AA on alcohol use for AC was explained by social factors but also by S/R and through negative affect (DDD only)

Aftercare (DDD)

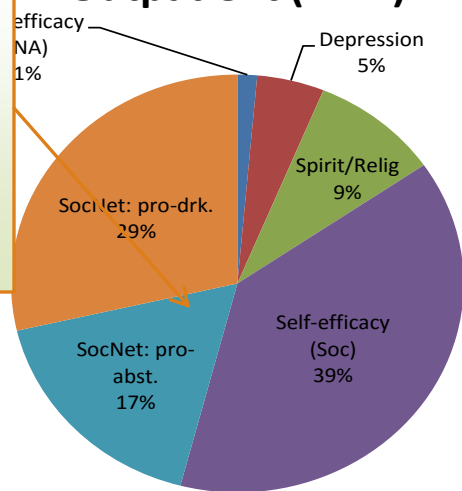


Outpatient (PDA)



Majority of effect of AA on alcohol use for OP was explained by social factors

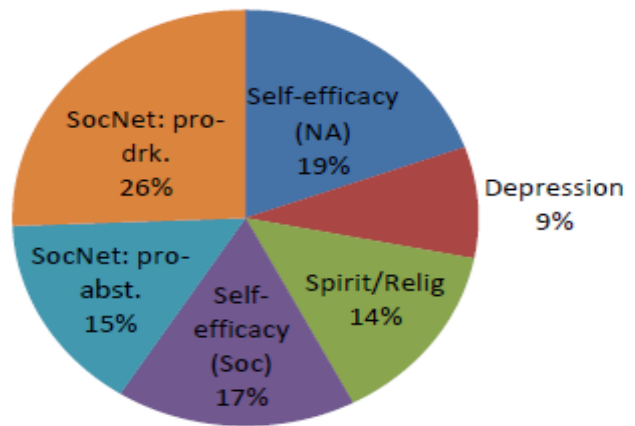
Outpatient (DDD)



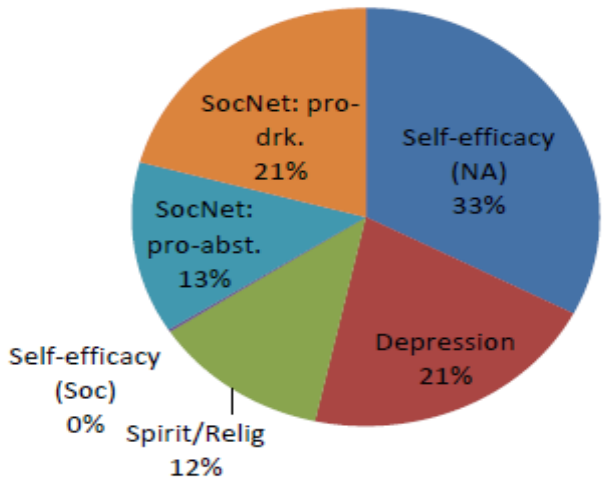
Source: Kelly, Hoepfner, Stout, Pagano (2012), Determining the relative importance of the mechanisms of behavior change within Alcoholics Anonymous: A multiple mediator analysis. *Addiction* 107(2):289-99

Do men and women benefit from AA in the same ways?

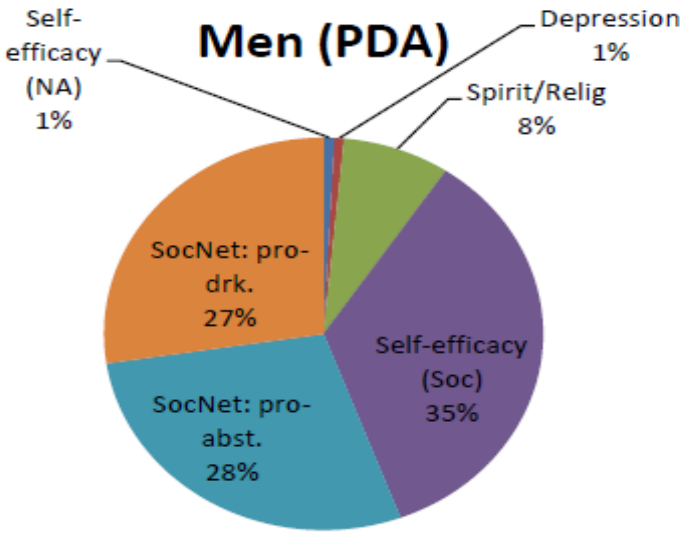
Women (PDA)



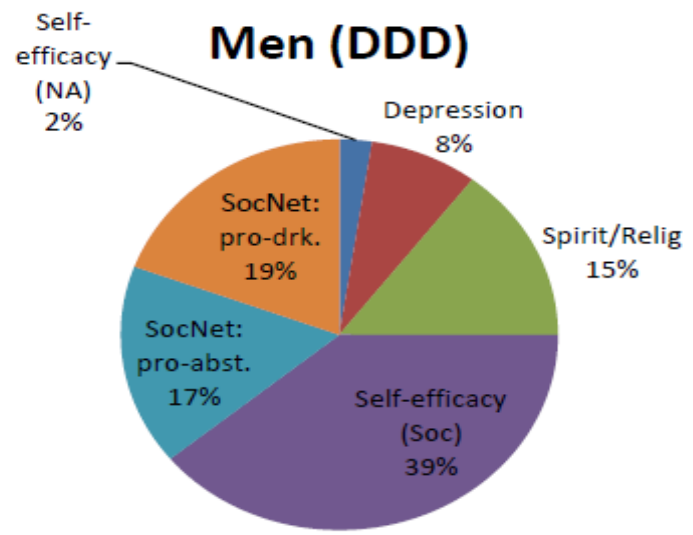
Women (DDD)



Men (PDA)



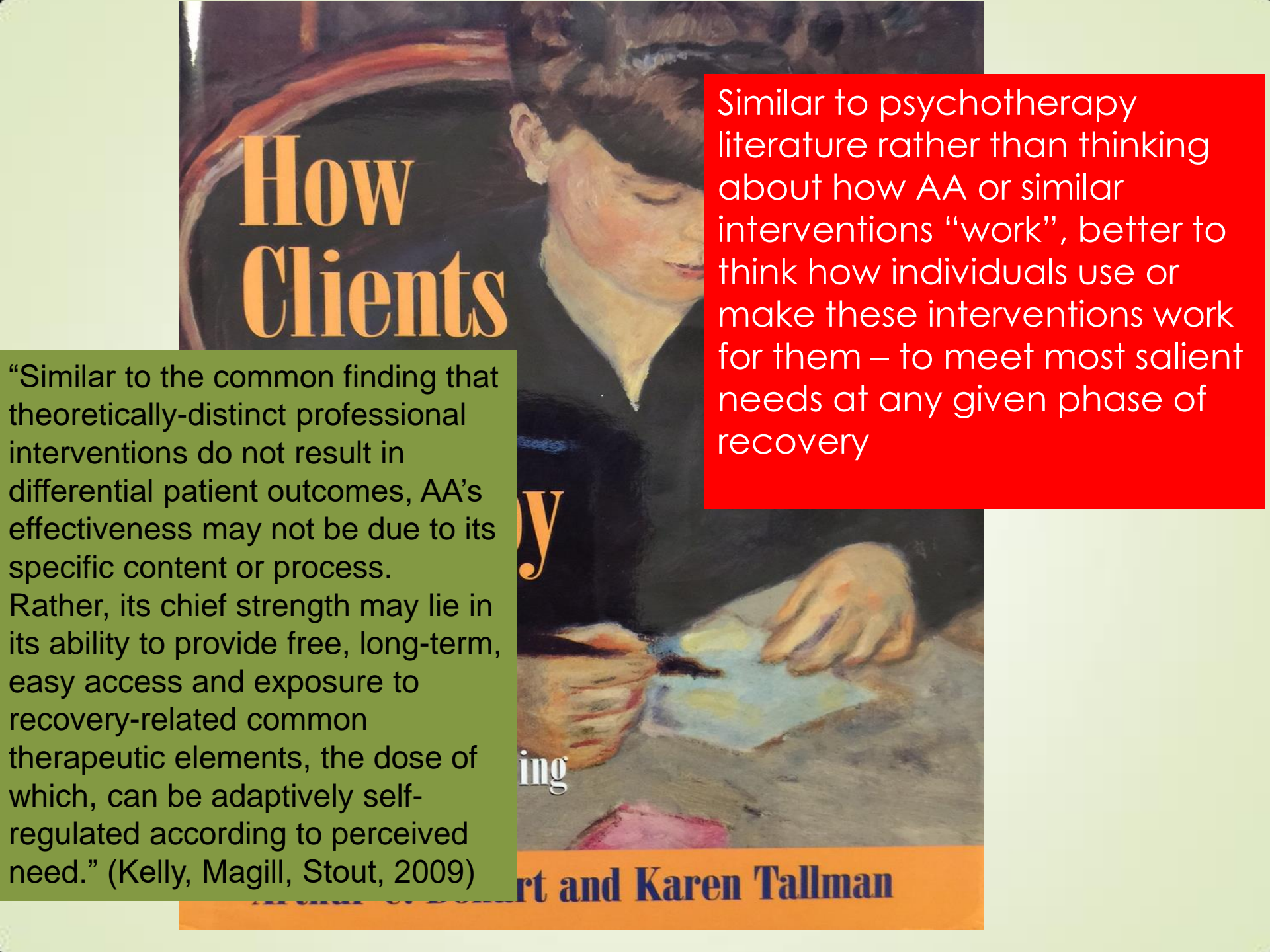
Men (DDD)



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

CONCLUSIONS

- ▶ AA-derived recovery benefits **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 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**
- ▶ Similar to psychotherapy literature (Bohart & Tollman, 1999) rather than thinking about how AA or similar organizations work, better to think **how individuals use or make these organizations work for them – to meet most salient needs at any given phase of recovery**



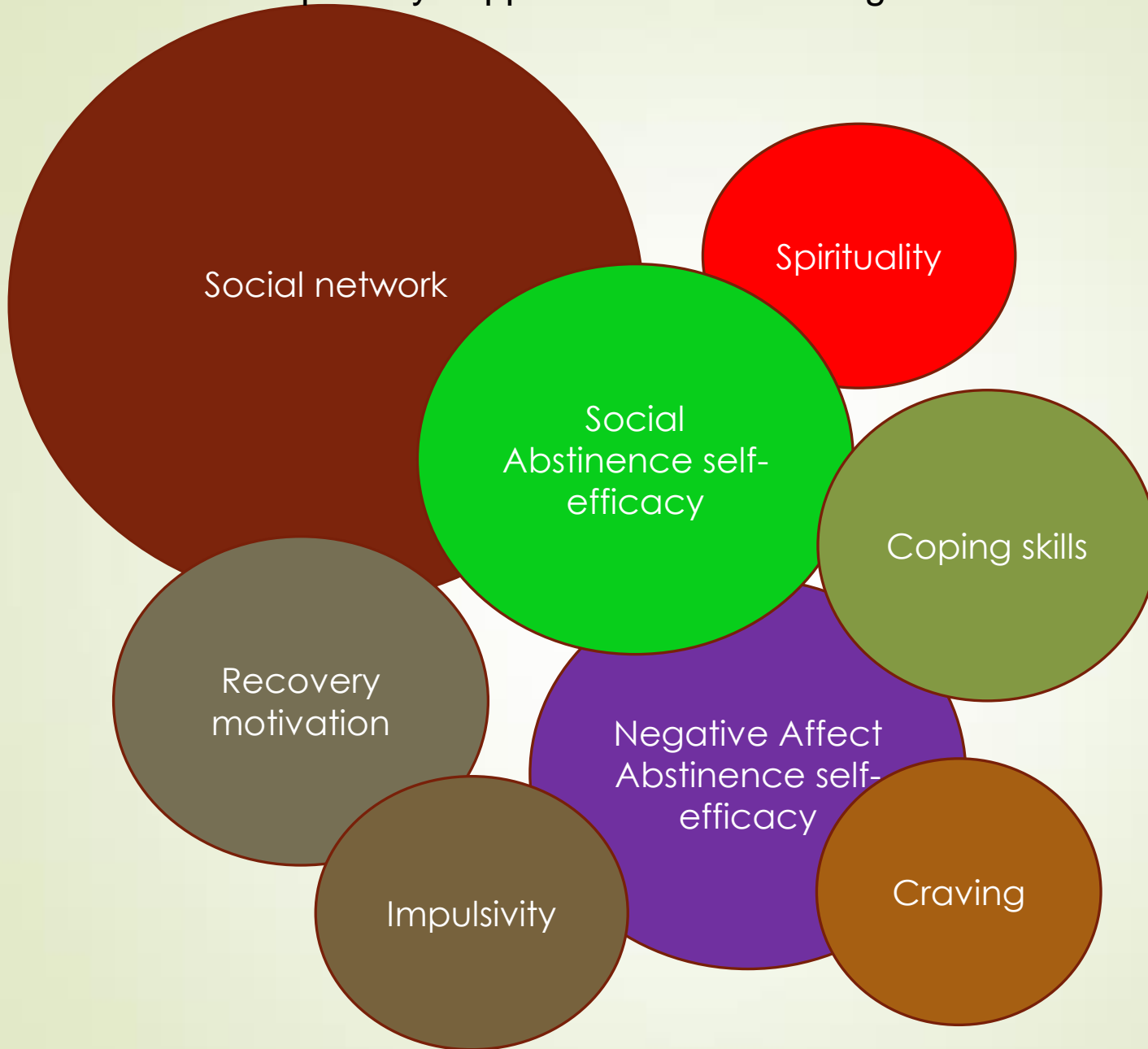
How Clients

“Similar to the common finding that theoretically-distinct professional interventions do not result in differential patient outcomes, AA’s effectiveness may not be due to its specific content or process. Rather, its chief strength may lie in its ability to provide free, long-term, easy access and exposure to recovery-related common therapeutic elements, the dose of which, can be adaptively self-regulated according to perceived need.” (Kelly, Magill, Stout, 2009)

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

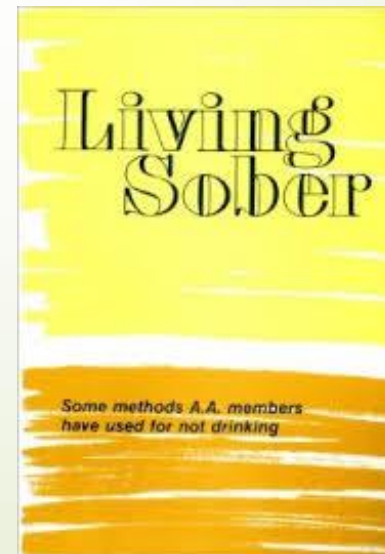
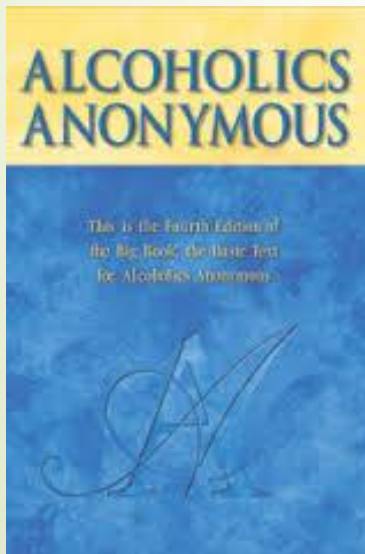
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rt and Karen Tallman

Empirically-supported MOBCs through which AA confers benefit

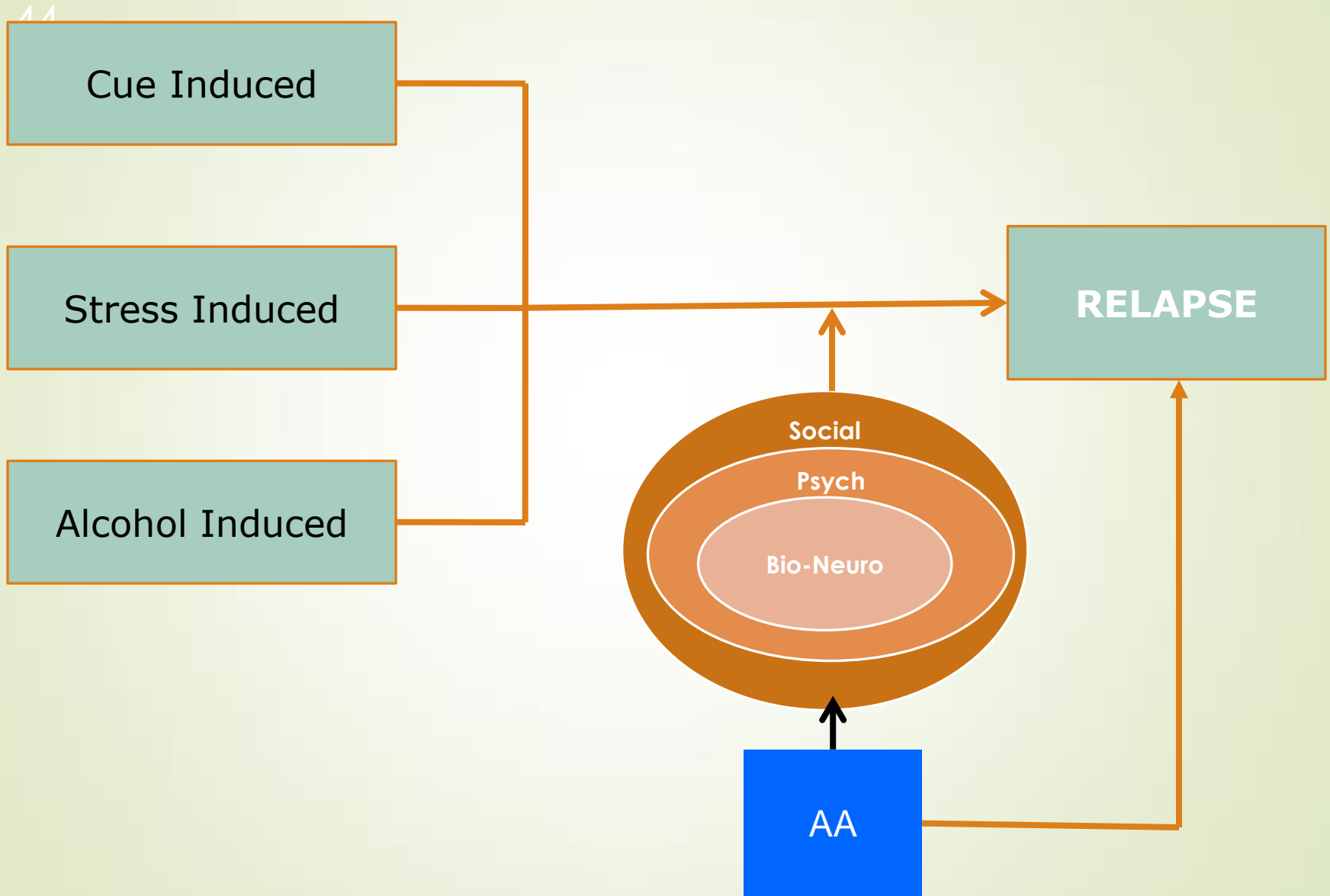


“Living Sober” vs. “Big Book”

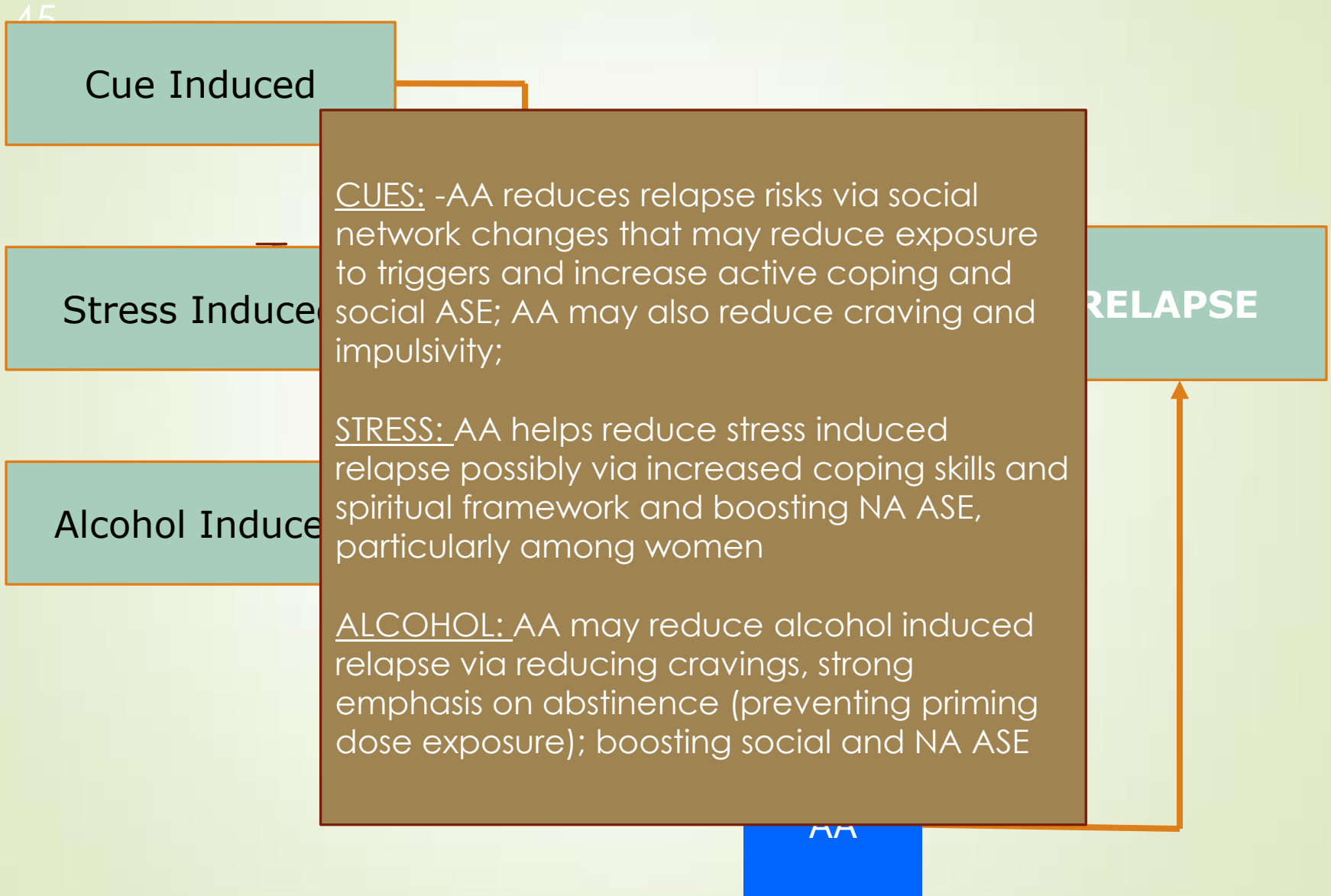
- MOBC research results suggest the way AA works has a closer fit with the pragmatic social, cognitive, and behavioral experiences of how its members stay sober documented in its later publications (*Living Sober*, 1975) than with the *Big Book* (1935; 2001), which was written in 1935 and based on relatively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



So, how might AA reduce relapse risk and aid recovery?



How might AA reduce relapse risk and aid recovery?



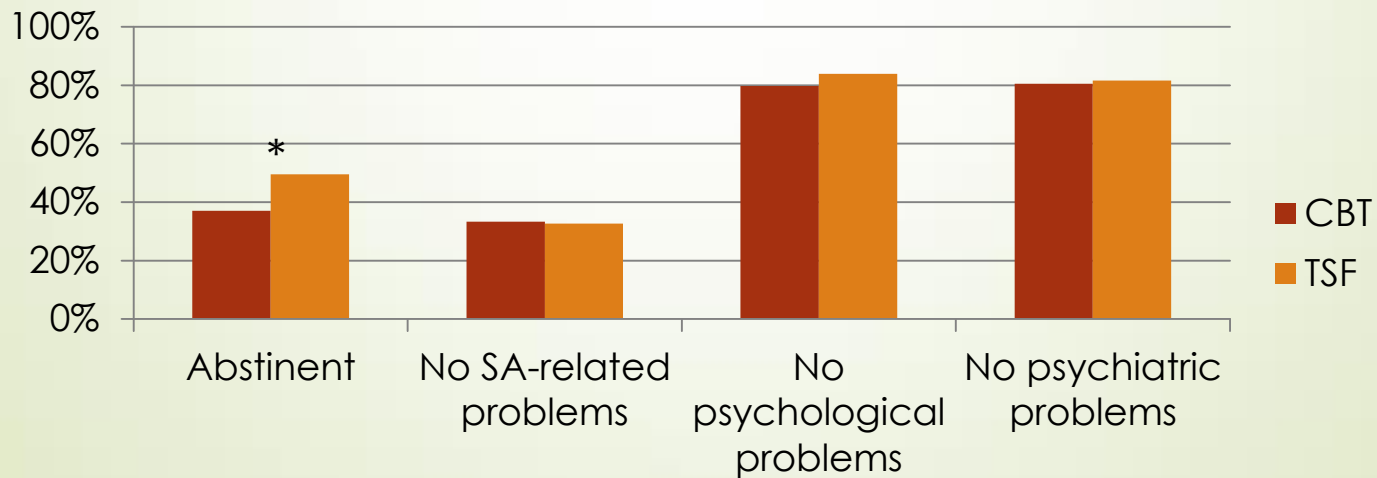
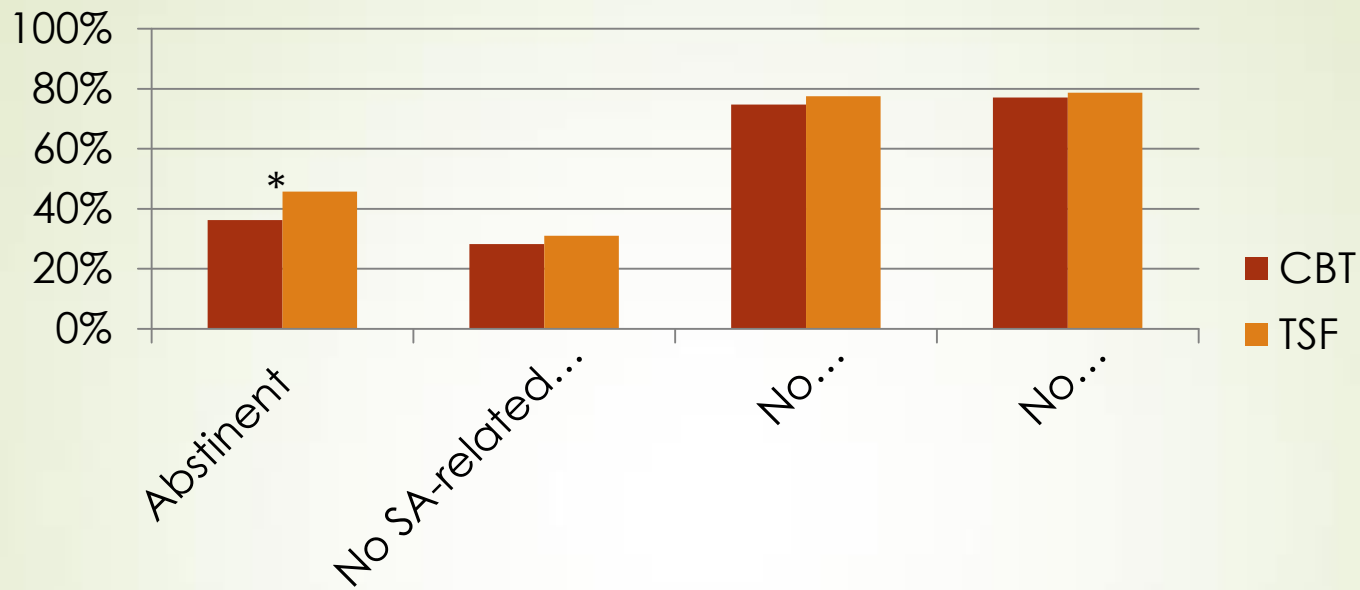
Overview

- SUDs: massive health, social, and economic burden
- Mutual-help groups (MHGs) can offset that burden
- MHGs work for many different types of individuals over and above formal treatment
- MHGs work through mechanisms similar to those operating in formal treatment
- **MHGs can reduce costs by reducing patients' reliance on professional services without any detriment to outcomes, and may even enhance outcomes**
- Empirically-supported clinical interventions increase patients' participation in MHGs and enhance treatment outcomes

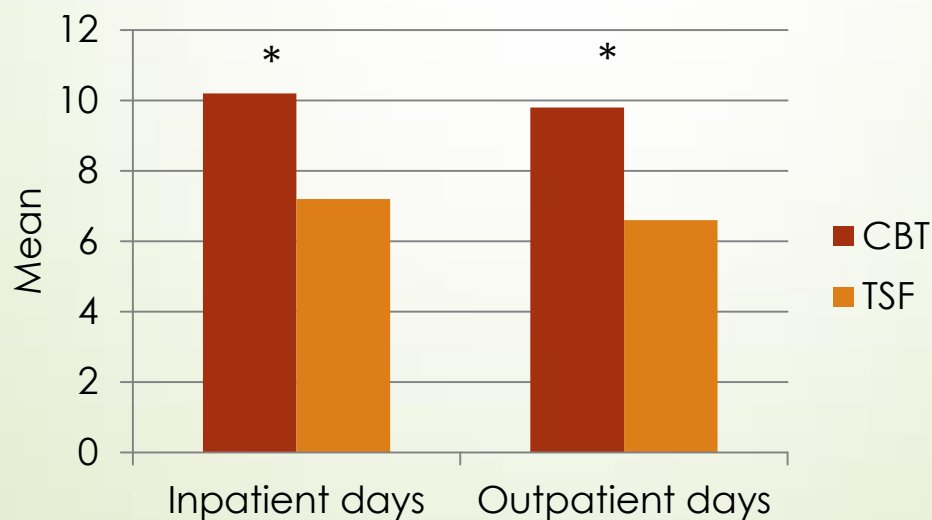
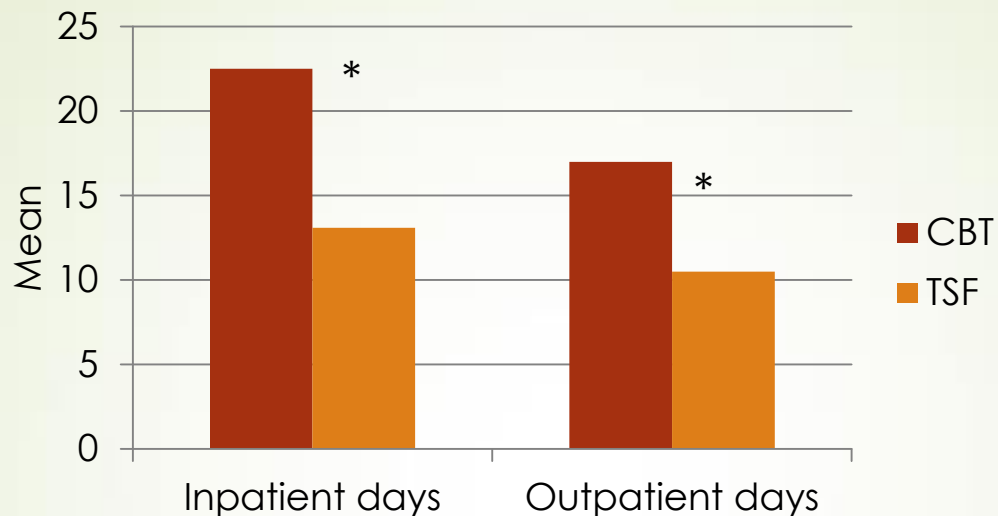
Health Care Cost offset Potential of Mutual aid organizations

- N = approx. 1,700
- Followed for 2yrs post tx
- Half treated in purest CBT intensive programs (mostly residential); half treated in purest 12-step-oriented intensive programs (mostly residential)
- Informal and formal health care utilization measured over time and \$\$\$

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

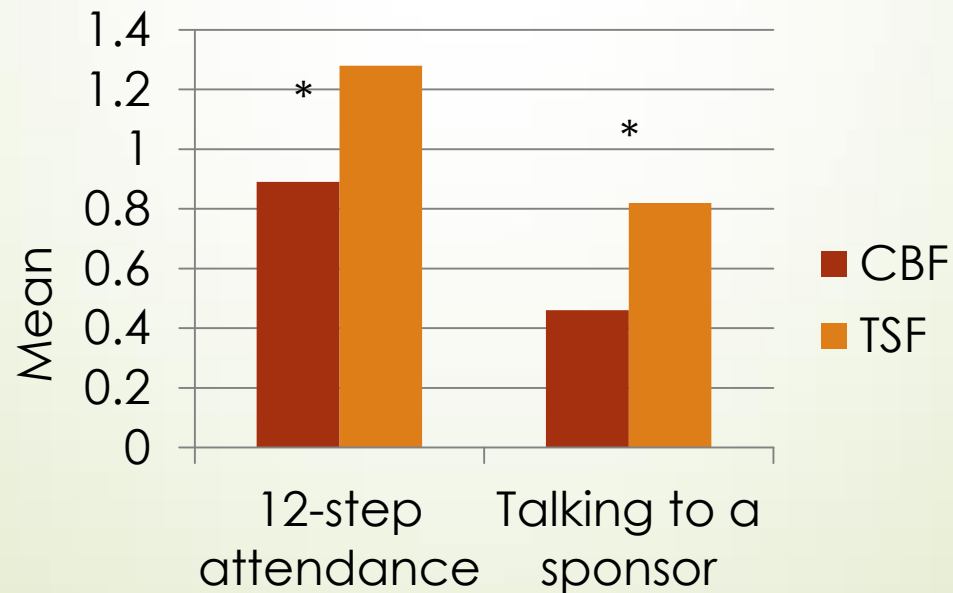
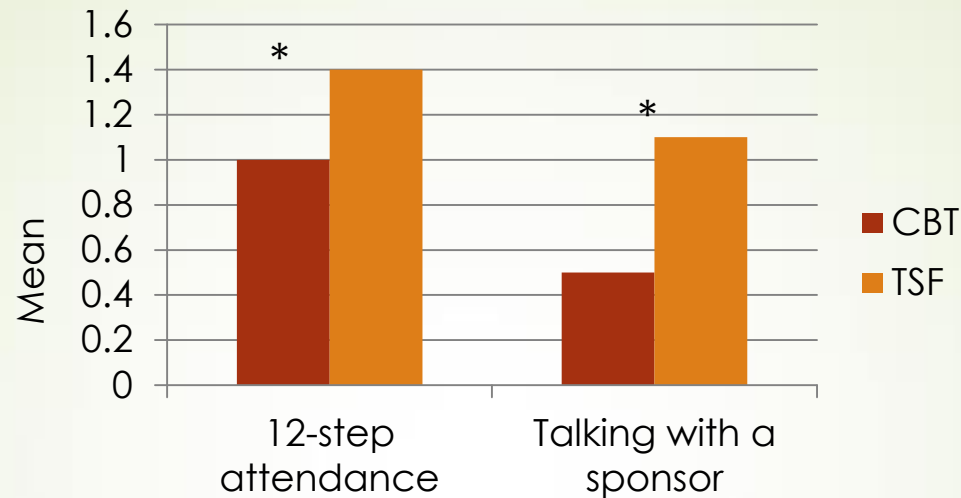


Cost-effectiveness (I) 1YR (above) and 2YR Follow-Up Mental health care utilization



Cost-effectiveness (I) 1 YR Follow-Up

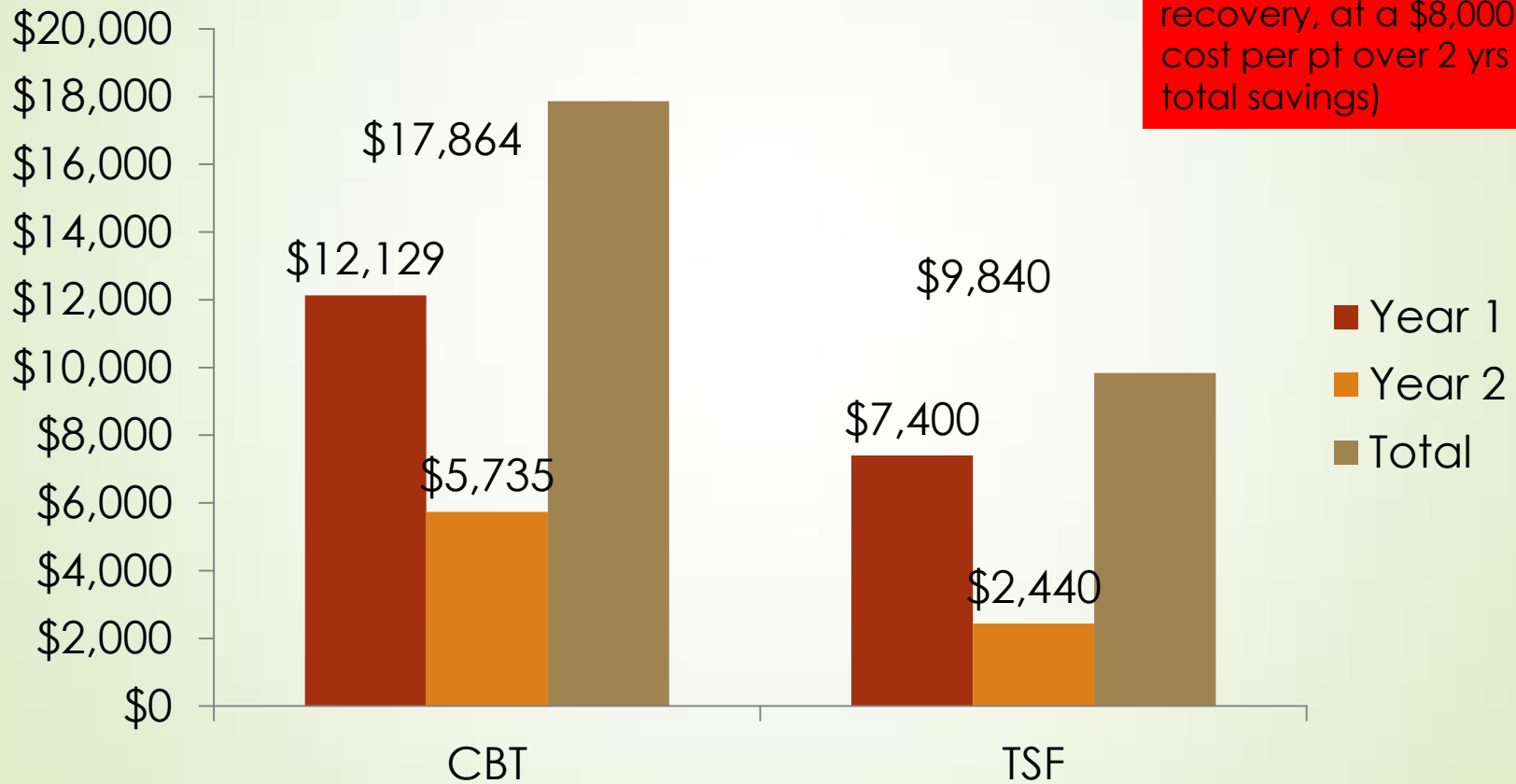
3. Self-help group involvement



HEALTH CARE COST OFFSET

CBT VS 12-STEP RESIDENTIAL TREATMENT

Compared to CBT-treated patients, 12-step treated patients more likely to be in recovery, at a \$8,000 lower cost per pt over 2 yrs (\$15M total savings)



Adolescent Health Care Cost Offset 7-year Study

- N = 403 adolescents, age 13-18
 - Follow-up: 6 months, 1, 3, 5, and 7 years
 - 12-step attendance associated with better outcomes over the 7 yr period
- Avg annual medical costs for all participants over 7 years: \$3085 per person per year
 - 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)

Overview

- SUDs: massive health, social, and economic burden
- Mutual-help groups (MHGs) can offset that burden
- MHGs work for many different types of individuals over and above formal treatment
- MHGs work through mechanisms similar to those operating in formal treatment
- MHGs can reduce costs by reducing patients' reliance on professional services without any detriment to outcomes, and may even enhance outcomes
- **Empirically-supported clinical interventions increase patients' participation in MHGs and enhance treatment outcomes**

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TSF Delivery Modes

Stand alone
Independent therapy



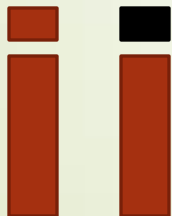
Integrated into an
existing therapy



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



As Modular add-on
linkage component



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
 - Therapist took firm stance against any drinking
 - Cognitive Behavioral Therapy
 - Therapist assisted in building skill set to maintain abstinence
 - Motivational Enhancement Therapy
 - Therapist aimed to build clients motivation to accept abstinence as objective

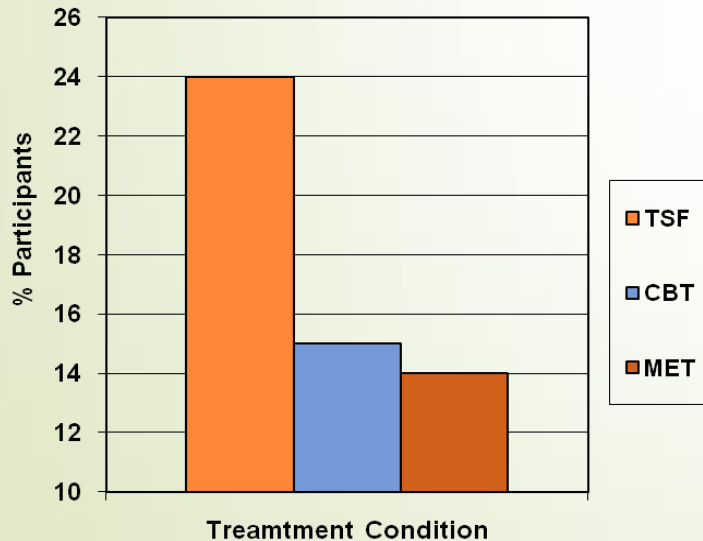
Project MATCH- Results (1)

- Individuals randomly assigned to TSF attended AA more frequently and had higher rates of continuous abstinence (71% more) 1 yr following tx (TSF=24%, CBT=15%, MET=14%) than those assigned to CBT or MET; similar on continuous outcomes (PDA/DDD)
- Social support for drinking
 - 3 yrs post treatment, clients whose social networks were more supportive of drinking prior to treatment had higher abstinence and lower drinks per drinking day in TSF than in MET (clients in CBT did not show a significant advantage over those in MET)

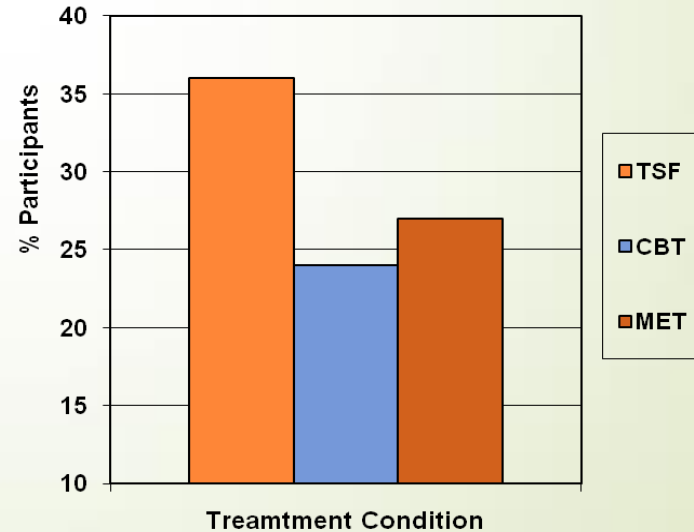
Project MATCH- Results (2)

- Effects mediated by ongoing AA attendance
- Across txs, AA attendees had better outcomes (Tonigan et al, 2002)
- AA valuable adjunct to SUD treatment - even when not formally emphasized

Continuous Abstinence Rates- 15 Months



Continuous Abstinence Rates- 3 Years



Examining the efficacy of 4 psychosocial treatments for cocaine-dependent patients

Sample: 487 individuals aged 18 to 60 with DSM-IV cocaine dependence from 5 sites:

- University of Pittsburg (PA)
- University of Pennsylvania (PA)
- Brookside Hospital (NH)
- Massachusetts General Hospital (MA)
- McLean Hospital (MA)

Design: Randomized controlled trial

Follow-up: Monthly assessments during 6 months of active treatment and follow-up at 9 and 12 months

Interventions: 4 manual-guided treatments

- IDC: Individual drug counseling plus group drug counseling (GDC); n = 121
- CT: Cognitive therapy plus GDC; n = 119
- SE: Supportive-expressive therapy plus GDC; n = 124
- GDC alone; n = 123

Outcomes: Addiction Severity Index-Drug Use Composite score, number of days of cocaine use in past month

ORIGINAL ARTICLE

Psychosocial Treatments for Cocaine Dependence

National Institute on Drug Abuse Collaborative Cocaine Treatment Study

Paul Crits-Christoph, PhD; Lynne Siqueland, PhD; Jack Blaine, MD; Arlene Frank, PhD; Lester Luborsky, PhD; Lisa S. Onken, PhD; Larry R. Muenz, PhD; Michael E. Thase, MD; Roger D. Weiss, MD; David R. Gastfriend, MD; George E. Woody, MD; Jacques P. Barber, PhD; Stephen F. Butler, PhD; Dennis Daley, MSW; Ihsan Salloum, MD; Sarah Bishop, MA; Lisa M. Najavits, PhD; Judy Lis, MSN; Delinda Mercer, PhD; Margaret L. Griffin, PhD; Karla Moras, PhD; Aaron T. Beck, MD

Background: This was a multicenter investigation examining the efficacy of 4 psychosocial treatments for cocaine-dependent patients.

Methods: Four hundred eighty-seven patients were randomly assigned to 1 of 4 manual-guided treatments: individual drug counseling plus group drug counseling (GDC), cognitive therapy plus GDC, supportive-expressive therapy plus GDC, or GDC alone. Treatment was intensive, including 36 possible individual sessions and 24 group sessions for 6 months. Patients were assessed monthly during active treatment and at 9 and 12 months after baseline. Primary outcome measures were the Addiction Severity Index–Drug Use Composite score and the number of days of cocaine use in the past month.

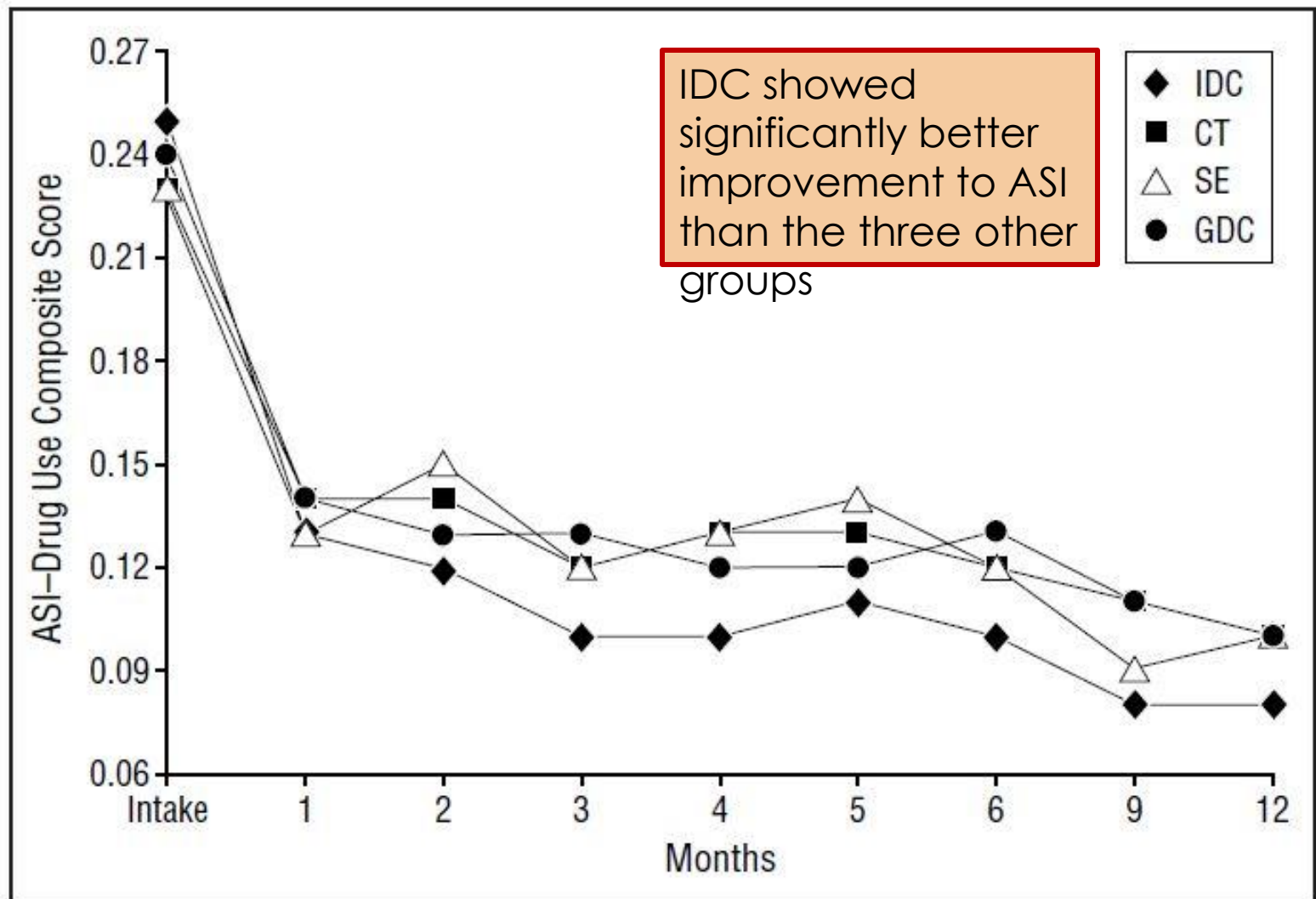
Results: Compared with the 2 psychotherapies and with GDC alone, individual drug counseling plus

GDC showed the greatest improvement on the Addiction Severity Index–Drug Use Composite score. Individual group counseling plus GDC was also superior to the 2 psychotherapies on the number of days of cocaine use in the past month. Hypotheses regarding the superiority of psychotherapy to GDC for patients with greater psychiatric severity and the superiority of cognitive therapy plus GDC compared with supportive-expressive therapy plus GDC for patients with antisocial personality traits or external coping style were not confirmed.

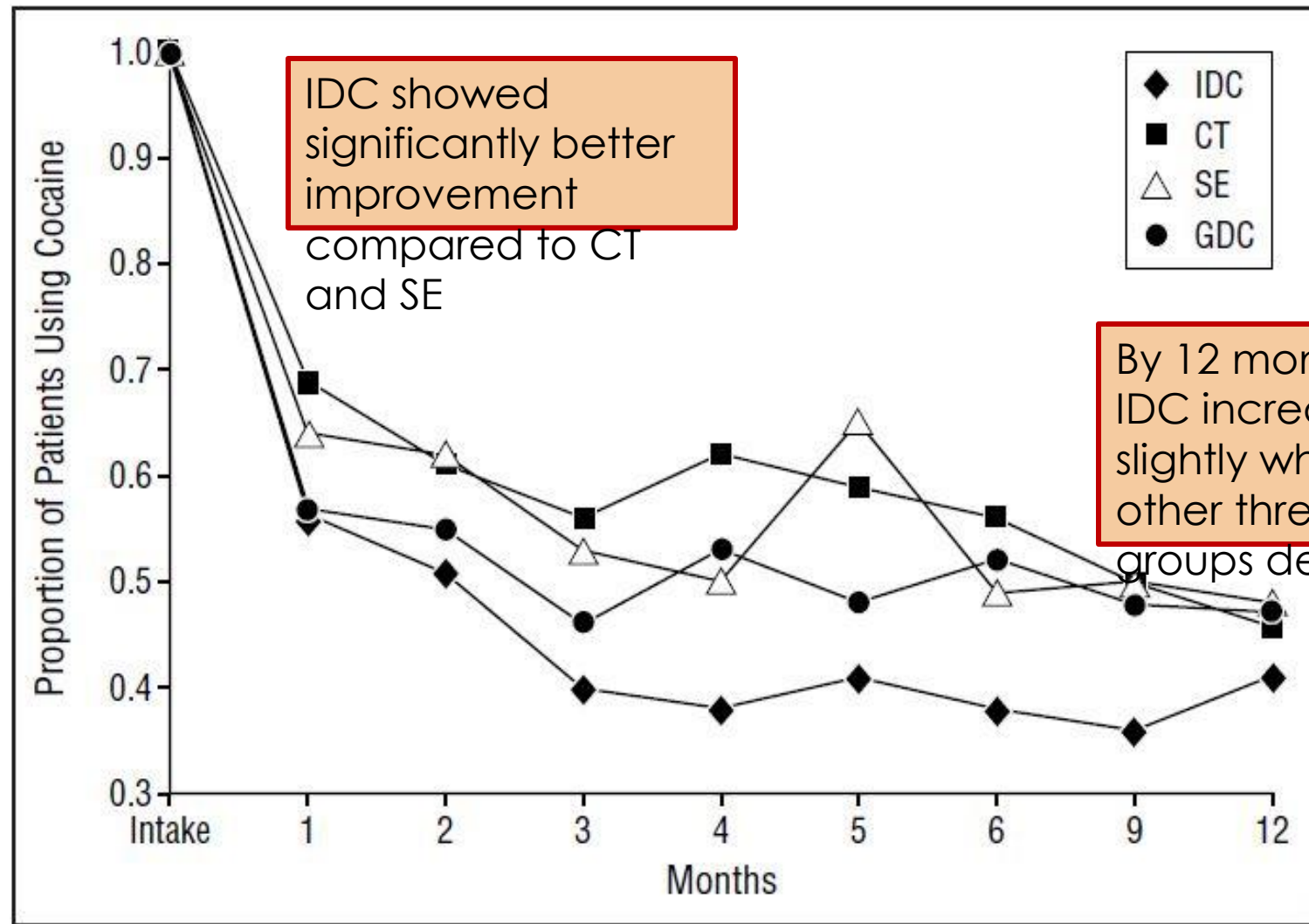
Conclusion: Compared with professional psychotherapy, a manual-guided combination of intensive individual drug counseling and GDC has promise for the treatment of cocaine dependence.

Arch Gen Psychiatry. 1999;56:493-502

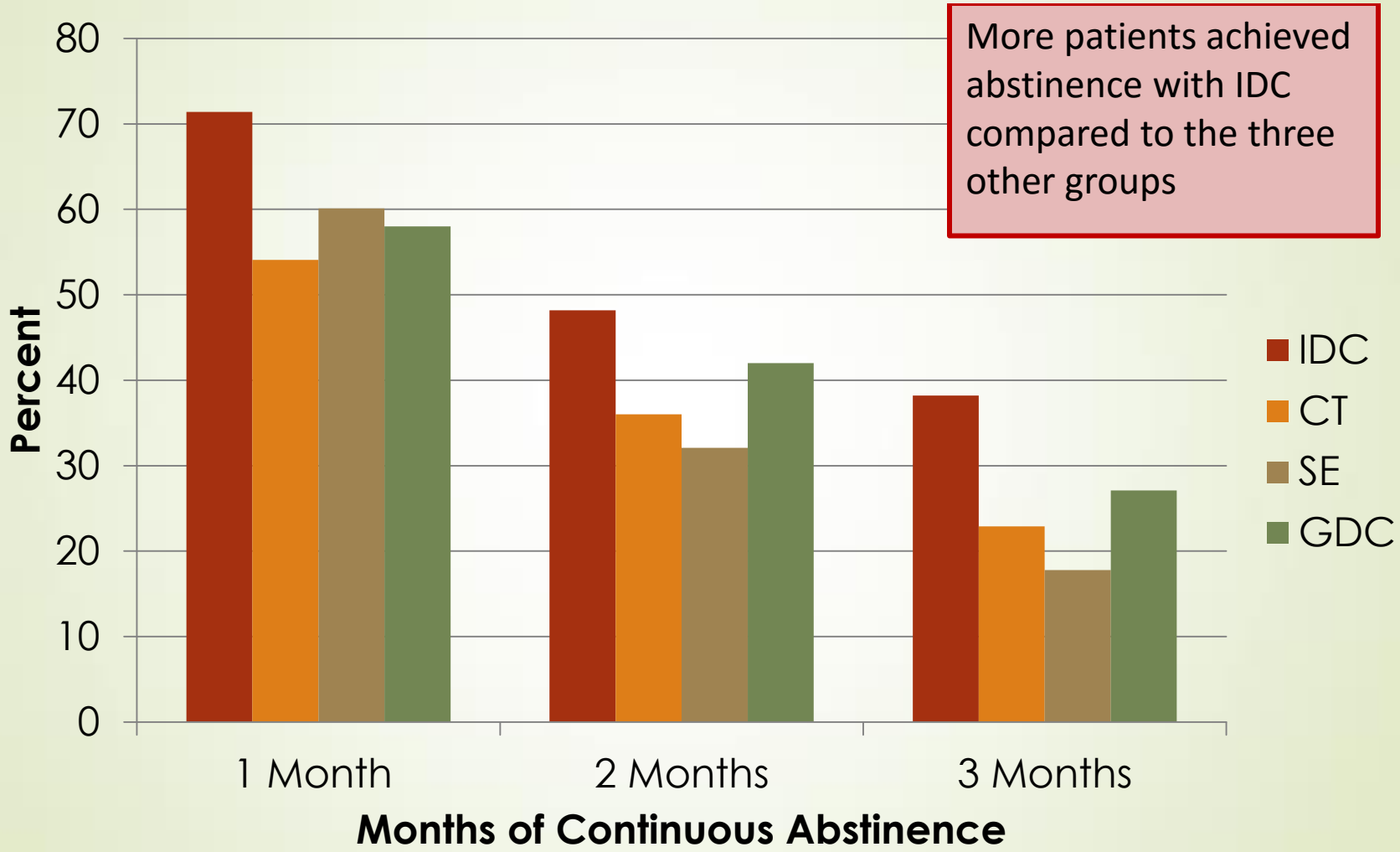
Mean ASI-Drug Use



Cocaine use in past 30 days



Continuous Abstinence from Cocaine Use



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TSF Delivery Modes

Stand alone
Independent therapy



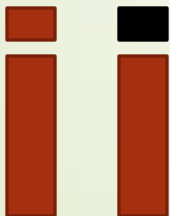
Integrated into an
existing therapy



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



As Modular add-on
linkage component



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

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

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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TSF Delivery Modes

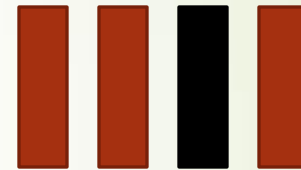
Stand alone
Independent therapy



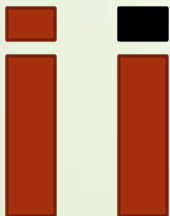
Integrated into an
existing therapy



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



As Modular add-on
linkage component



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

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

MAAEZ -4 Core Components/Sessions

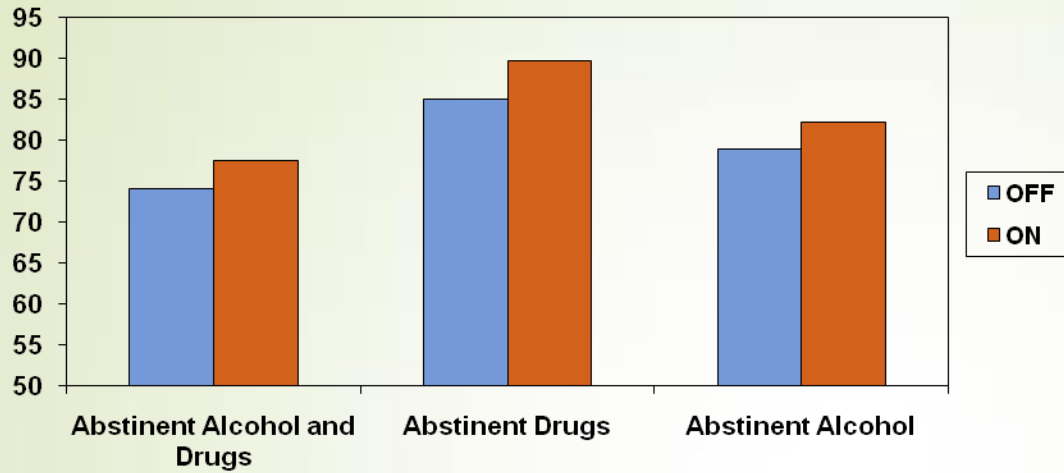
- ▶ **Spirituality:** provides clients with range of “spirituality” definitions that do not all require religious orientation. The homework assignment after that session is to talk to someone longer sober, after a meeting.
- ▶ **Principles Not Personalities:** deals with AA myths, types of meetings/etiquette. Homework- ask someone for phone number and speak on the phone before next session.
- ▶ **Sponsorship:** explains function of AA sponsor, offers guidelines for picking someone, and includes role-playing to practice asking for a sponsor and overcoming a rejection. Homework that week is to get a temporary sponsor.
- ▶ **Living Sober,** tools for staying sober are tackled: relapse triggers, service, and avoiding “slippery” people, places, and things. Homework for this session is to socialize with someone in AA who has more sobriety.

MAAEZ Intervention- Results

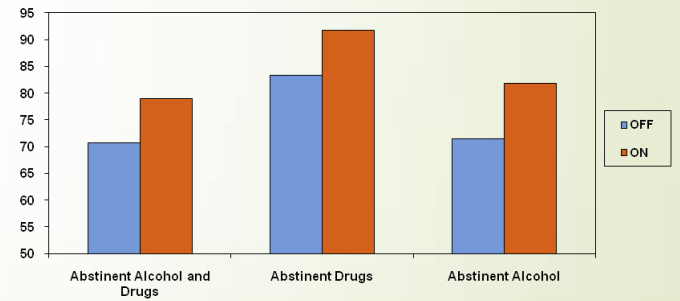
- **Abstinence:**
 - **TSF participants significantly more past 30 day alcohol abstinence, drug abstinence, and both alcohol and drug abstinence at 12 month time period**
 - **Increased odds of continuous abstinence in general and for each additional MAAEZ session attended**
- **Prior AA Exposure:**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

MAAEZ Intervention- Results

6 Months



12 Months



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TSF Delivery Modes

Stand alone
Independent therapy



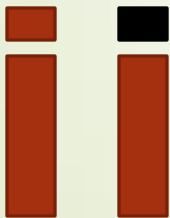
Integrated into an
existing therapy



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



As Modular add-on
linkage component



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

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

Psychiatric Comorbidity TSF Linkage: Efficacy Intensive 12-step referral (Timko et al, 2011)

- ▶ Timko et al. (2011; N=287): standard vs. intensive referral condition
- ▶ Patients in intensive referral group more likely to attend/be involved in dual-focused mutual-help groups (DFGs) and substance-focused mutual-help groups (SFGs), and had less drug use and better psychiatric outcomes at follow-up
- ▶ Only 23% of patients in the intensive-referral group attended a DFG meeting during the six-month follow-up period, while 85% attended a SFG



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Does active referral by a doctor or 12-Step peer improve 12-Step meeting attendance? Results from a pilot randomised control trial[☆]

Victoria Manning^a, David Best^b, Nathan Faulkner^a, Emily Titherington^a, Alun Morinan^a, Francis Keaney^a, Michael Gossop^a, John Strang^{a,*}

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ABSTRACT

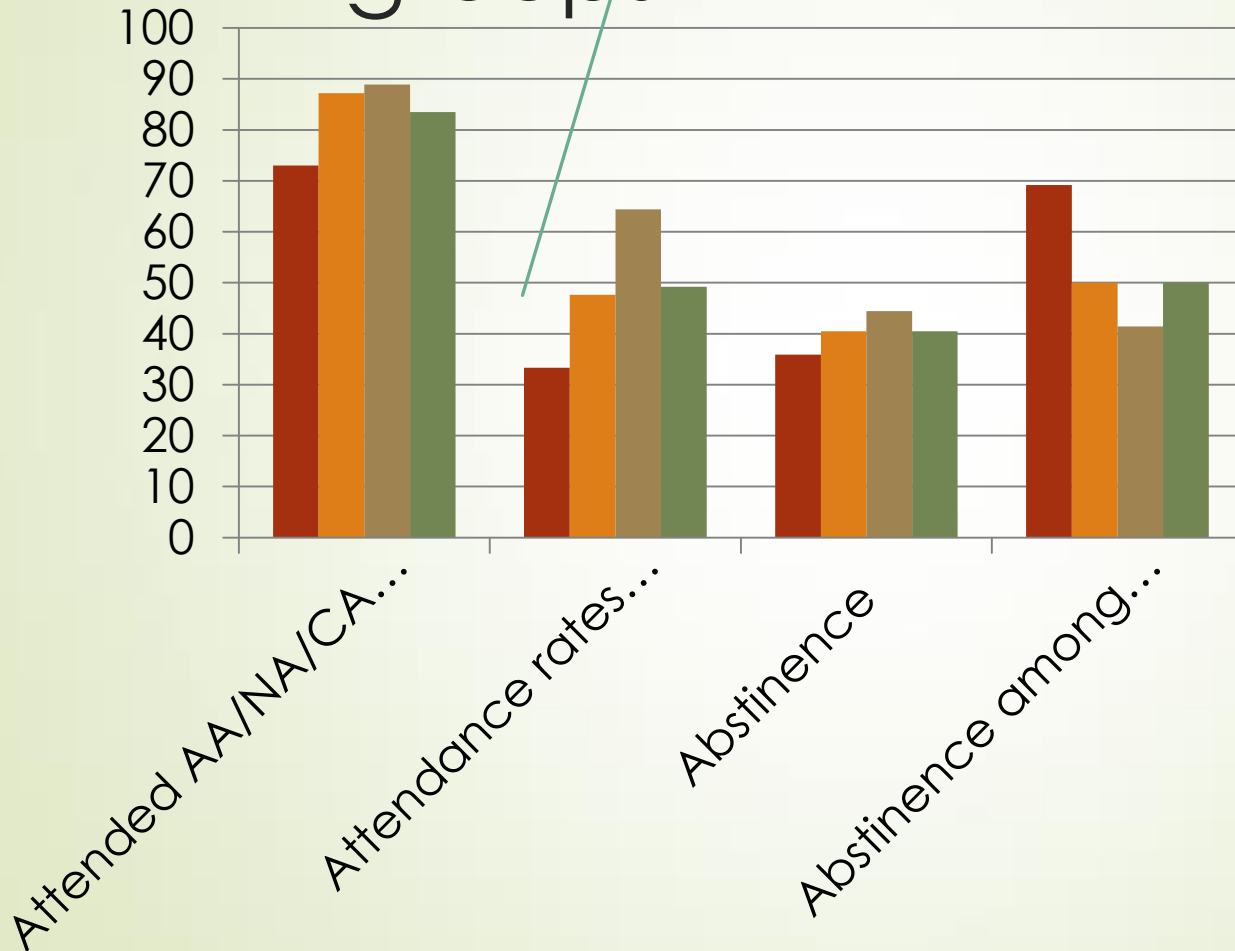
Background: Active engagement in 12-Step self-help groups (SHG) is associated with improvements in substance use outcomes during and after treatment, yet levels of participation in SHG meetings in the UK remain low.

Method: An RCT investigating the impact of active referral to SHG, delivered by doctors or 12-Step peers during inpatient treatment on both inpatient and post-treatment meeting attendance was conducted. 151

Active referral to 12-step groups

- ▶ Research Questions:
 - ▶ Are active referrals to 12-step group associated with increased 12-step attendance and improved substance use outcomes?
 - ▶ Are peer referrals more effective than physician referrals?
- ▶ Study Design: Randomized controlled trial
- ▶ Sample: 151 alcohol or drug dependent patients admitted for a 10-14 day NHS inpatient drug/alcohol detoxification treatment in London
- ▶ Intervention:
 - ▶ Control group:
 - ▶ No-referral intervention (NI): Patient provided with a list of meetings
 - ▶ Intervention groups:
 - ▶ Doctor-referral intervention (DI): initiate a dialogue with patient regarding 12-step meetings
 - ▶ Peer-referral intervention (PI): initiate a dialogue with patient regarding 12-step meetings and share personal experiences with 12-step groups

Active referral to 12-step groups



Attendance was significantly higher among those who had received an active referral intervention from either a doctor or peer compared to the no intervention group

- No referral (NI)
- Doctor referral (DI)

Overview

- SUDs confer a massive health, social, and economic burden
- Mutual-help groups (MHGs) can help offset burden
- MHGs work for many different types of individuals and produce additional benefit over and above formal treatment
- MHGs work through mechanisms similar to those operating in formal treatment
- MHGs can reduce costs by reducing patients' reliance on professional services without any detriment to outcomes, and may even enhance outcomes
- Empirically-supported clinical interventions can increase patients' participation in MHGs and enhance treatment outcomes



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Thank you for your attention!

Acknowledgments

- ▶ Funding Sources: National Institutes of Health (R01s, R21s, K24 from NIAAA and NIMH)
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