

Twelve-step participation at 5-year follow-up among a diverse sample of adolescents entering chemical dependency treatment

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Background

- 12-step participation is now widely utilized as a treatment aftercare resource by individuals with substance use (SU) problems
- Studies have found the effectiveness of 12-step participation on post-treatment outcomes among adults
- However, little is known about patterns and effectiveness of 12-step participation among adolescents

Research Questions

- What are the patterns of 12-step participation 5 years after CD treatment intake among adolescents?
- What are the relationships between 12-step participation and SU outcomes at 5-year follow-up?

Methods

- Study Sites: 4 Northern CA Kaiser Permanente (KP) CD programs
- Study Subjects: 419 adolescents aged 13-18 seeking treatment at the 4 study sites between March 2000 and May 2002
- Follow-up interviews at 1 year, 3 years, and 5 years after intake (with response rates of 92%, 86%, and 86%, respectively)

Measures

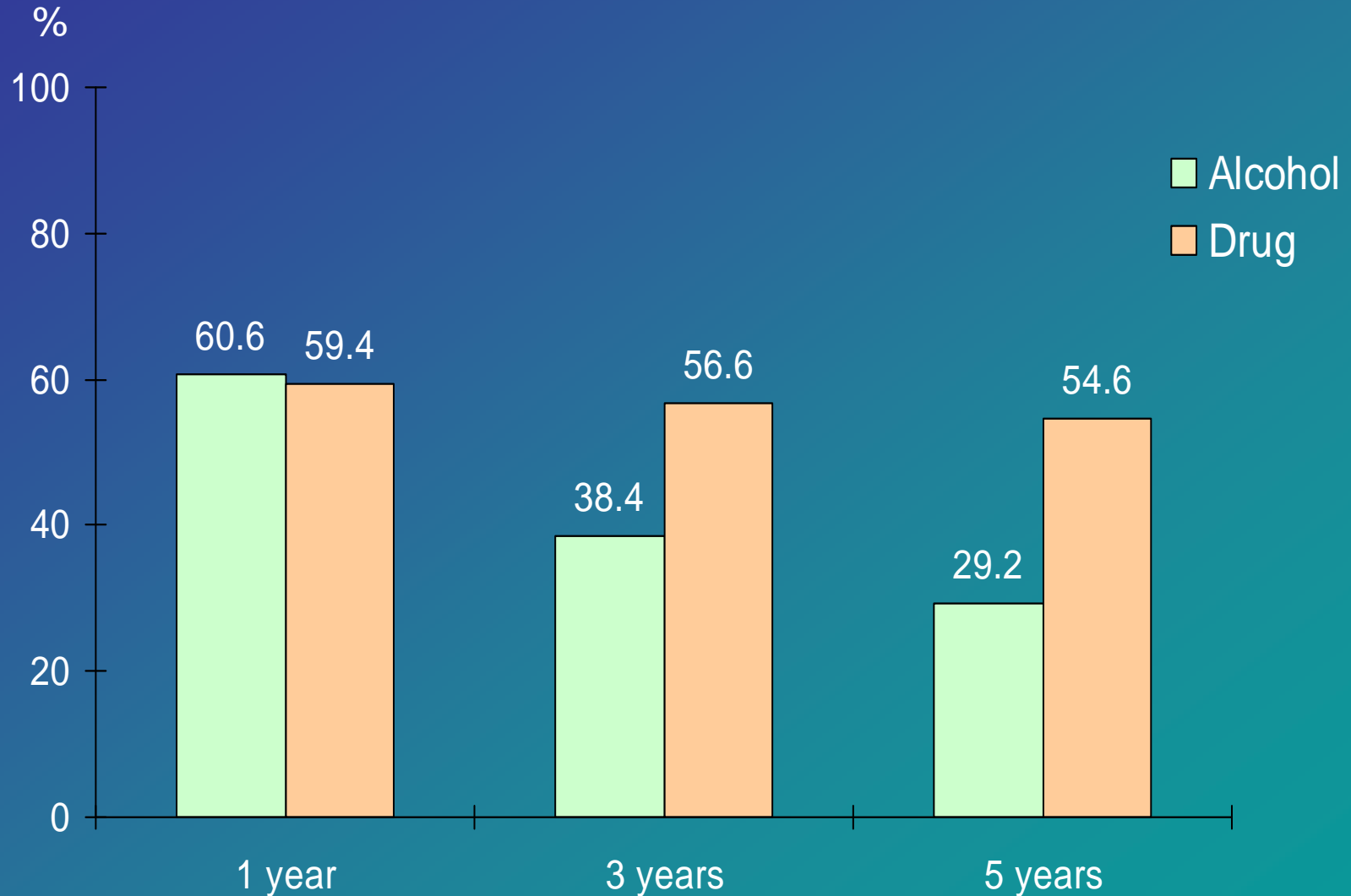
- SU outcomes: 30-day abstinence from alcohol and drugs (excluding tobacco) at each follow-up
- 12-step participation: attending 10 or more meetings in the prior 6 months at each follow-up
- Control variables:
 - **Individual characteristics –**
 - demographics (age, gender, race/ethnicity)
 - baseline SU severity
 - baseline mental health (MH) severity (YSR internalizing and externalizing scores)
 - baseline motivation (CMR total score)
 - **Treatment utilization –**
 - length of stay for the index CD treatment
 - MH services received during index CD treatment
 - CD and MH services received between years 2-5, within or outside the health plan

Sample Description

- 419 adolescents (34% girls)
- Mean age = 16.2 years
 - 29% 13-15y
 - 28% 16y
 - 43% 17-18y
- Ethnicity:
 - 6% Asian
 - 9% Native American
 - 16% African-American
 - 20% Hispanic
 - 49% White
- High levels SU in the 6 months preceding their intake
 - girls had significantly higher use than boys of alcohol, stimulant, sedative, cocaine, heroin and party drugs

Sterling S, Kohn C, Lu Y, Weisner C. (2004). Pathways to substance abuse treatment for adolescents in an HMO. *J. of Psychoactive Drugs* 36(4):439-453.

30-day Abstinence Rates Over 5 Years

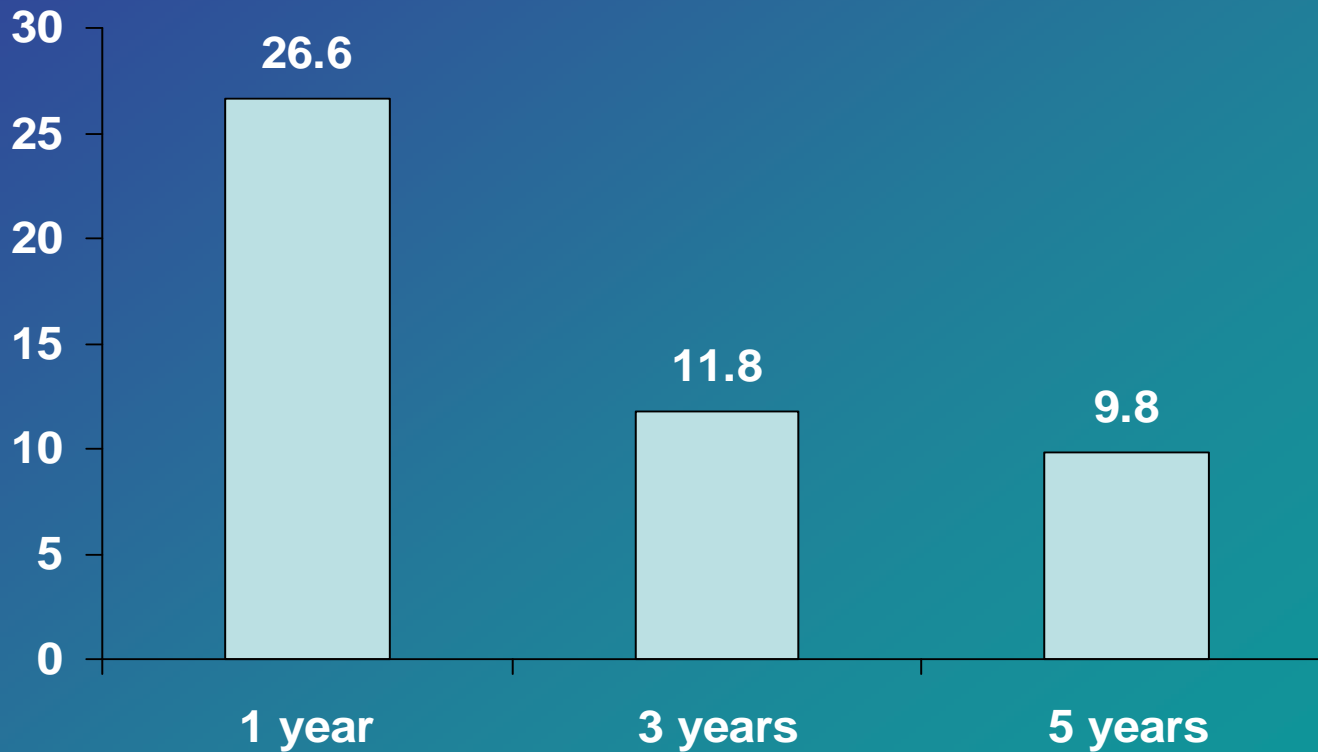


12-step Involvement at CD Treatment Entry

- At CD treatment entry, 86 (21%) reported ever attended 12-step meetings
 - 20% among boys vs. 22% among girls
 - 14% among 13-15 years old vs. 20% among 16 years old vs. 25% among 17-18 years old (p<0.10)
 - 22% among white vs. 19% among non-white

12-step Participation Patterns Over 5 Years

% reported attending 10+ meetings in past 6mo at each time point:



Statistical Analysis

- We conducted multivariate logistic regression analyses to examine the associations between 12-step participation and SU outcomes at 1, 3, and 5 years
 - Concurrent and lagged effects
 - Each model adjusting for age, gender, race/ethnicity, baseline SU and MH severity, baseline motivation, and CD and MH treatment services received between time points

Associations between 12-step Participation and Alcohol Abstinence at 1, 3, and 5 Years

Alcohol Abstinence at:

	<u>1 year</u>		<u>3 years</u>		<u>5 years</u>		
	<u>Model A</u> OR (95% CI)	<u>Model A</u> OR (95% CI)	<u>Model B</u> OR (95% CI)	<u>Model A</u> OR (95% CI)	<u>Model B</u> OR (95% CI)	<u>Model C</u> OR (95% CI)	
12-step meeting attendance in the prior 6 months at:							
1 year, 10+ vs. 0-9	2.40 (1.35,4.28) [†]	1.89 (1.04,3.44)**	1.76 (0.95,3.24)*	2.74 (1.36,5.51) [†]	2.51 (1.23,5.14)**	2.30 (1.11,4.74)**	
3 years, 10+ vs. 0-9	N/A	--	2.70 (1.24,5.88)**	--	2.31 (0.98,5.46)*	N.S.	
5 years, 10+ vs. 0-9	N/A	N/A	N/A	--	--	3.04 (1.10,8.42)**	

Note 1: * p<0.10; ** p<0.05; † p<0.01.

Note 2: N/A = Not applicable; N.S. = Not significant.

Note 3: Multivariate logistic regression models controlled for age, gender, race/ethnicity, baseline SU and MH severity, baseline motivation, and CD/MH treatment received between time points.

Associations between 12-step Participation and Drug Abstinence at 1, 3, and 5 Years

	Drug Abstinence at:					
	<u>1 year</u>	<u>3 years</u>		<u>5 years</u>		
	<u>Model A</u> OR (95% CI)	<u>Model A</u> OR (95% CI)	<u>Model B</u> OR (95% CI)	<u>Model A</u> OR (95% CI)	<u>Model B</u> OR (95% CI)	<u>Model C</u> OR (95% CI)
12-step meeting attendance in the prior 6 months at:						
1 year, 10+ vs. 0-9	1.72 (0.99,2.99)*	N.S.	N.S.	N.S.	N.S.	N.S.
3 years, 10+ vs. 0-9	N/A	--	2.39 (1.04,5.05)**	--	N.S.	N.S.
5 years, 10+ vs. 0-9	N/A	N/A	N/A	--	--	N.S.

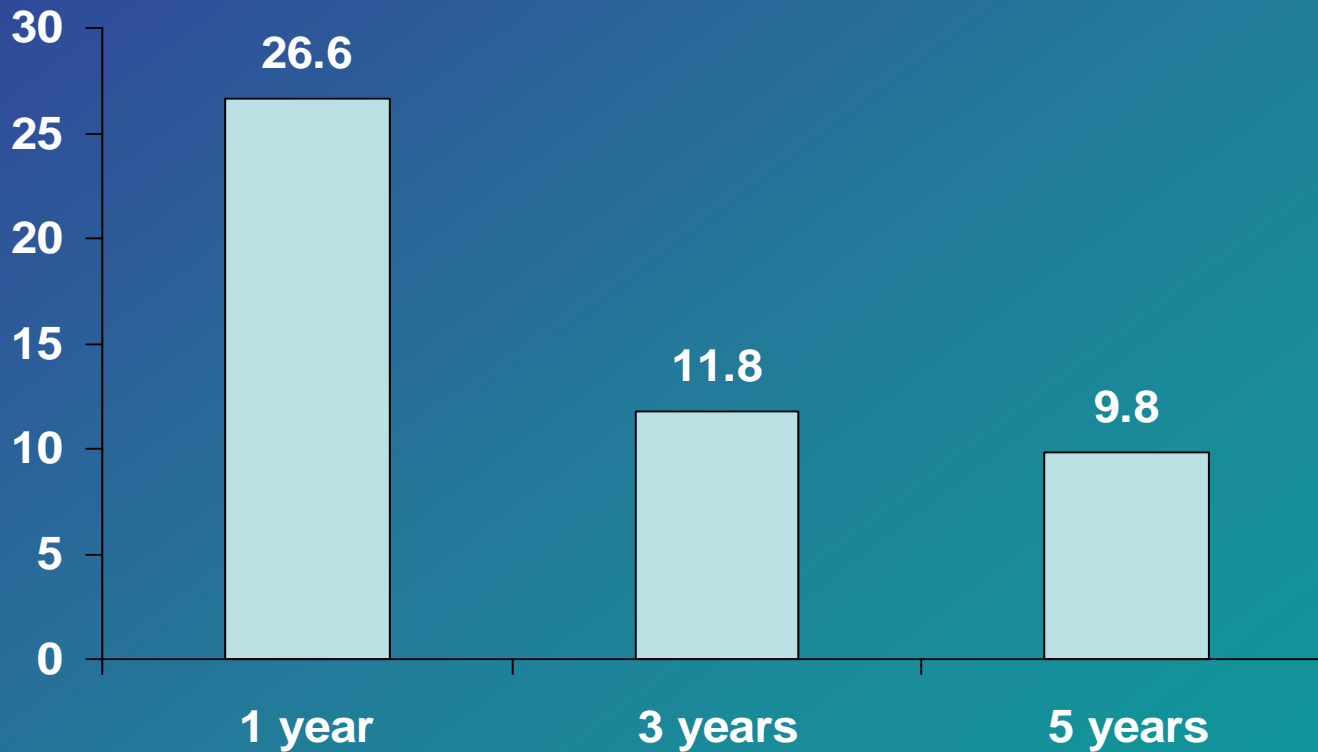
Note 1: * p<0.10; ** p<0.05.

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Note 3: Multivariate logistic regression models controlled for age, gender, race/ethnicity, baseline SU and MH severity, baseline motivation, and CD/MH treatment received between time points.

12-step Participation Patterns Over 5 Years

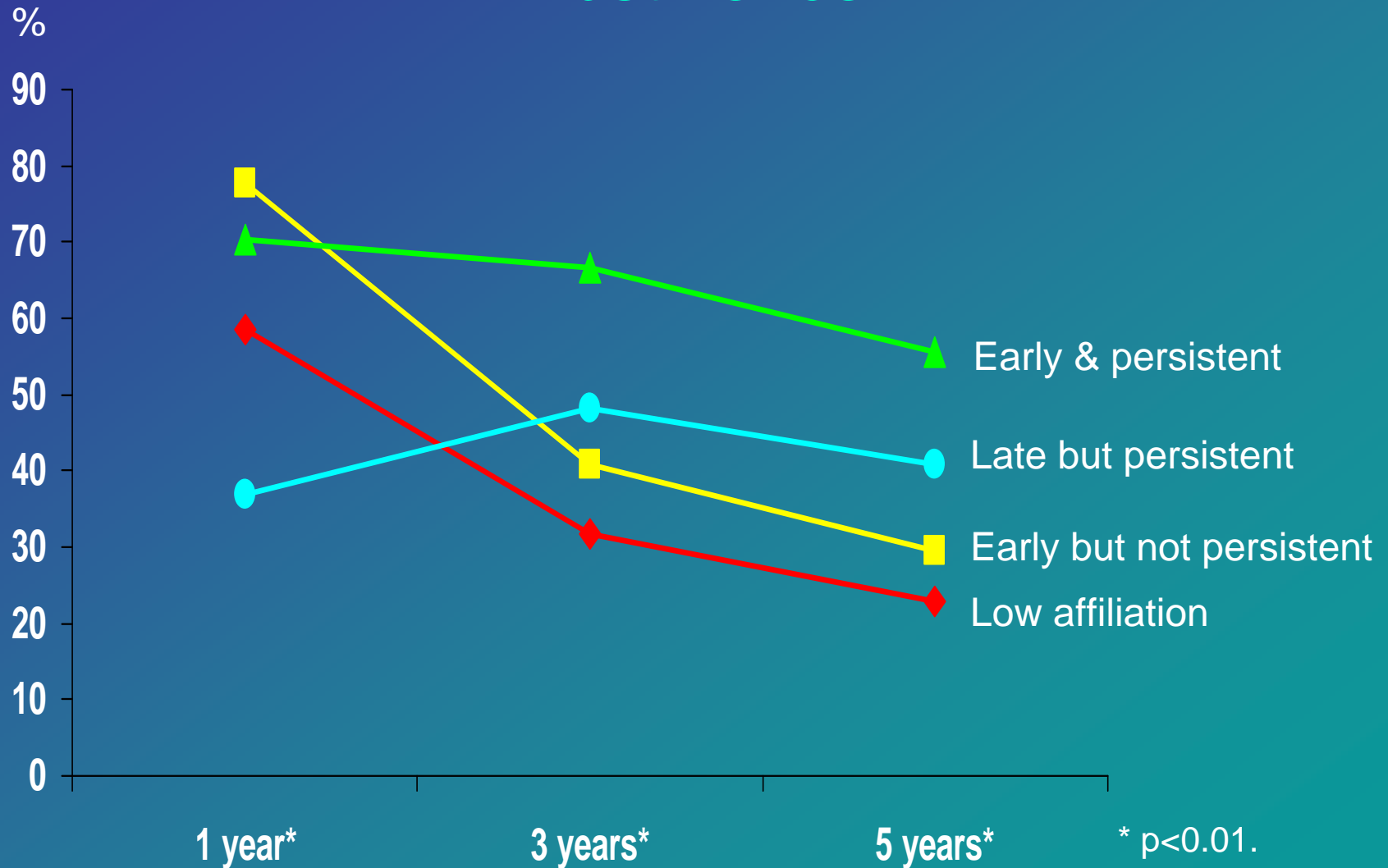
% reported attending 10+ meetings in past 6mo at each time point:



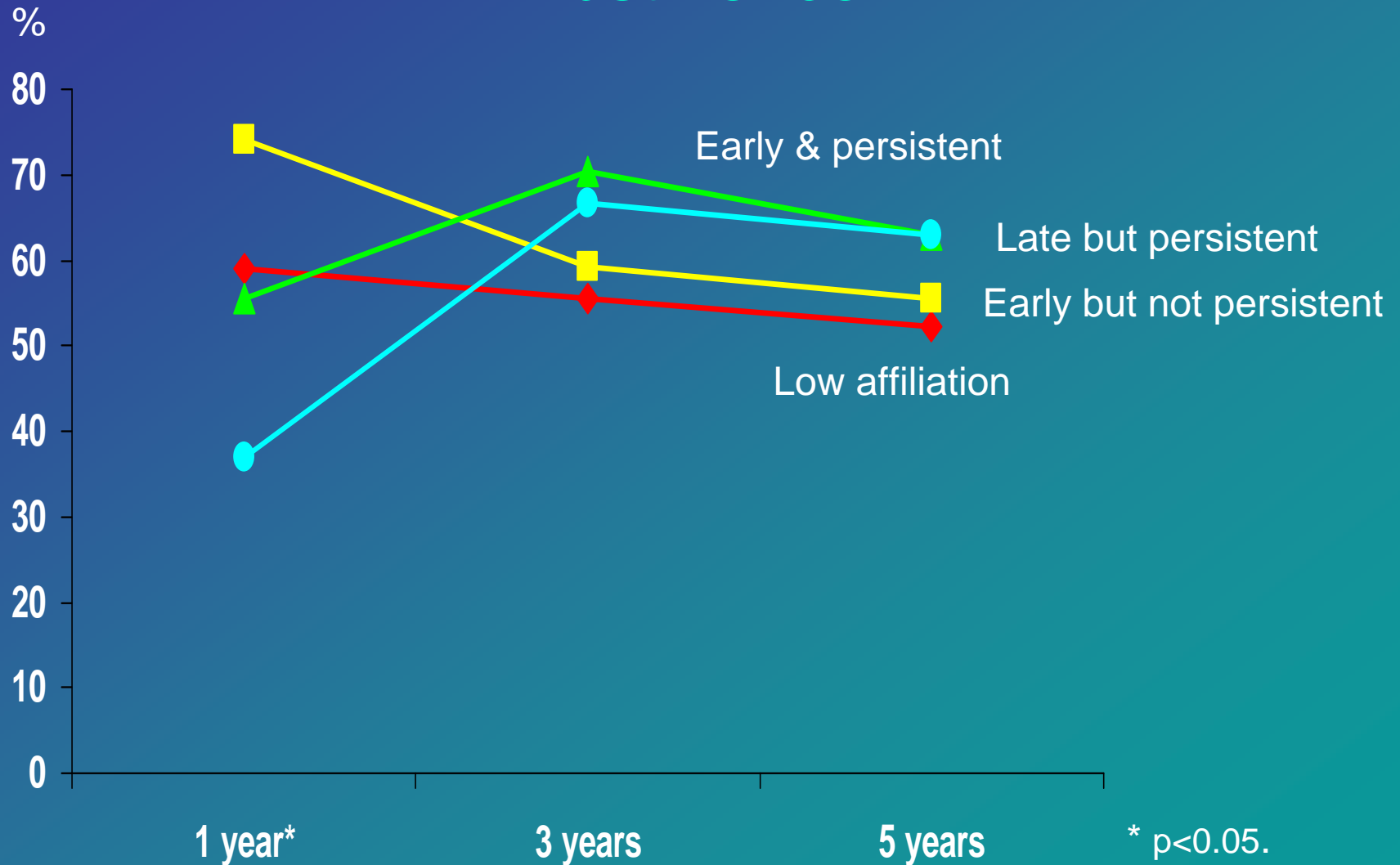
12-step Participation Patterns Over 5 Years

- We identified four groups based on 12-step participation over 5 years:
 - **Low affiliation** (N=205, 65.5%) – attended 0-9 meetings in prior 6 months at 1, 3, and 5 years
 - **Early but not persistent** (N=54, 17.2%) – attended 10+ meetings in prior 6 months at 1 year, but 0-9 meetings at 3 and 5 years
 - **Early and persistent** (N=27, 8.6%) – attended 10+ meetings in prior 6 months at 1 year, and 10+ meetings at 3 or 5 years
 - **Late but persistent** (N=27, 8.6%) – attended 0-9 meetings in prior 6 months at 1 year, but 10+ meetings at 3 or 5 years

12-step Participation Patterns vs. Alcohol Abstinence



12-step Participation Patterns vs. Drug Abstinence



Measure of Problem Use

■ *Total abstinence:*

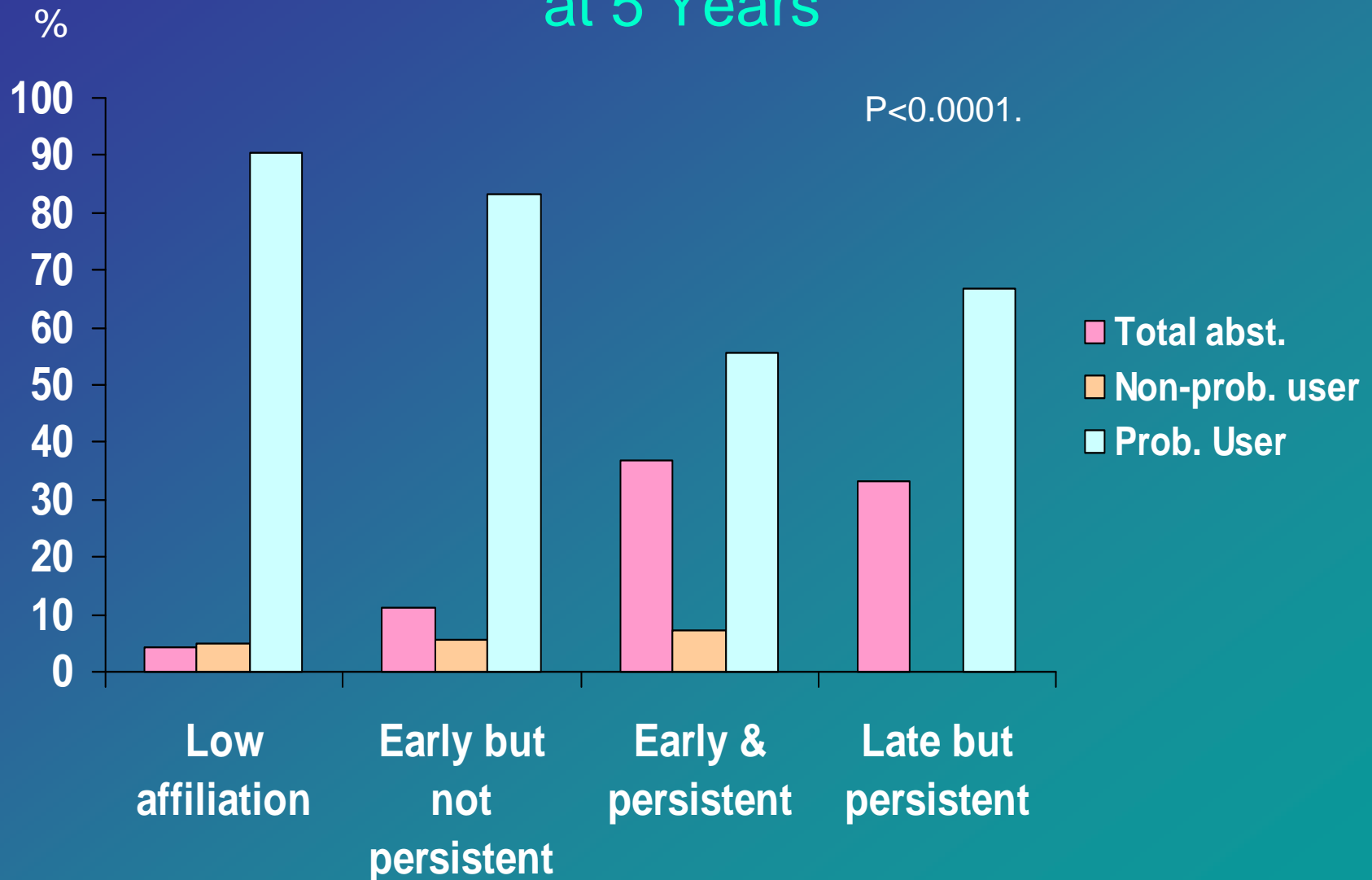
abstinent from alcohol and drugs (other than tobacco) in past 6 months

■ *Non-problem use:*

- Used alcohol but no more than once per week and never had 3 or more drinks in past 6 months, OR
- Used marijuana, but only once a month or less in past 6 months, AND
- Used no other drugs (but tobacco OK) in past 6 months; AND
- Had no dependence/abuse symptoms in past 30 days

■ *Problem use*

12-step Participation Patterns vs. Problem Use at 5 Years



Summary

- Low 12-step participation over 5 years after intake among adolescents
 - 27% at 1 year, 12% at 3 years, and 10% at 5 years attended 10+ meetings in prior 6 months, respectively
- Reasons for low participation?
 - Concerns about developmental fitness of a disease model and/or 12-step emphasis on abstinence and spiritual growth (Kelly & Myers, 2007)
 - Greater age similarity is positively associated with 12-step attendance among adolescents (Kelly et al., 2005)

Summary (Continued)

- 12-step participation significantly associated with alcohol abstinence over 5 years
 - Concurrent and lagged effects on alcohol abstinence
 - 12-step participation in short and longer post-treatment time windows are both independent significant contributors on long-term abstinence (Moos & Moos, 2004; Bond et al., 2003; Kaskutas et al., 2005)
 - Concurrent effects only on drug abstinence at 1 and 3 years

Summary (Continued)

- Diversity in 12-step participation patterns over 5 years
 - 4 subgroups: low affiliation, early but not persistent, early and persistent, late but persistent
 - Differences across groups in alcohol abstinence over time and problem use at 5 years

Conclusions

- 12-step participation may play an important role in long-term recovery for adolescents with SU problems
 - Predictive of **alcohol abstinence** and **non-problem use**
 - Importance of **early affiliation** and **persistent participation**
- Implications for clinical approaches:
 - CD programs and clinicians have the option of facilitating 12-step during treatment

Conclusions (Continued)

■ More studies are needed:

- 12-step facilitation interventions for adolescents
- Other treated and untreated samples, and varying treatment contexts
- To follow 12-step participations over longer period
- To examine the construct of 12-step affiliation more thoroughly
- To understand who are more or less likely to benefit from 12-step affiliation and why

Kaskutas LA, Ammon L, Delucchi K, Room R, Bond J, Weisner C. (2005). Alcoholics Anonymous Careers: Patterns of AA Involvement Five Years after Treatment Entry. *Alcoholism: Clinical and Experimental Research* 26(8): 1228-33.

Kelly JF, Myers MG. (2007). Adolescents' Participation in Alcoholics Anonymous and Narcotics Anonymous: Review, Implications and Future Directions. *J. of Psychoactive Drugs* 39(3): 259-69.