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## WHAT DO ADOLESCENTS THINK ABOUT 12-STEP GROUPS? PERCEPTIONS AND EXPERIENCES OF TWO AA-EXPOSED CLINICAL SAMPLES

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### Abstract

**Objectives**—Referral to Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) is a common continuing care recommendation. Evidence suggests some youth benefit, yet, despite referrals, youth participation is low. Little is known about adolescents' experiences of AA/NA. Greater knowledge would inform and help tailor aftercare recommendations.

**Method**—Two clinical samples of youth (N=74 and N=377) were asked about their perceptions of, and experiences with, AA/NA with responses categorized by content into domains assessed for face validity and reliability.

**Results**—The aspects of AA/NA youth liked best were general group dynamic processes related to universality, support, and instillation of hope. The most common reason for discontinuing was boredom/lack of fit.

**Conclusions**—General group-therapeutic, and not 12-step-specific, factors are most valued by youth during early stages of recovery and/or degree of AA/NA exposure. Many youth discontinue due to a perceived lack of fit, suggesting a mismatch between some youth and aspects of AA/NA.

### Keywords

Mutual-help groups; self-help; adolescents; Alcoholics Anonymous; Narcotics Anonymous; addiction; substance abuse; treatment; substance use disorder

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The adolescent substance use disorder (SUD) treatment system in the United States consists of approximately 1,000 facilities nationally catering to roughly 200,000 of the 2.3 million individuals receiving specialty treatment each year (1). Although these programs adhere to an array of theoretical orientations and deliver a variety of treatment content, the majority incorporates at least some aspects of the 12-step philosophy and program of Alcoholics Anonymous (AA) and Narcotics Anonymous (NA; (2, 3)). One recent study designed to locate exemplary adolescent SUD treatment programs across the U.S., found that of the

nearly 150 recommended programs, more than two-thirds (67%) described their services as “12-step” to a lesser or greater degree (3).

Furthermore, irrespective of whether 12-step concepts are employed as part of the formal intervention protocol, many programs encourage patients to participate in community 12-step groups post-discharge for recovery-specific support (e.g., (4, 5)). Increasing confidence in the utility of these free, and widely available, community resources has grown in light of mounting empirical evidence for their utility among adult samples (5-9). However, in spite of emphatic recommendations to study youth in 12-step-related research (i.e., (6)), adolescents have remained largely unstudied (10).

The available empirical evidence pertaining to youth participation in AA/NA, although limited, suggests youth who become involved in AA/NA groups post treatment also appear to have better outcomes (10-15). However, despite clinical encouragement and referral to AA/NA, many youths do not attend at all, and of those that do, many discontinue their attendance or do not participate at clinically-recommended levels (14, 16).

In theory, AA and NA possess certain elements that make them an attractive adjunct to formal professional treatment. For instance, they provide recovery-specific support as members share sobriety experiences, give advice, and serve as role models. Sponsors and other members often make themselves available “on demand” (e.g., by telephone) providing a degree of flexibility not available in professional settings. Notably, and in contrast to time-limited, formal treatment programs, AA and NA can be attended free of charge for as long as individuals desire and require no paperwork or disclosure of personal information. AA and NA meeting content and group formats also may foster heightened awareness of current relapse risk, as personal stories of members’ struggles with addiction and recovery help other members maintain consciousness about the ongoing risks of relapse while simultaneously instilling hope for recovery.

However, despite such potential benefits, there are considerable barriers specific to youth AA/NA participation. Adolescents, for example, tend to report lower addiction severity and fewer withdrawal symptoms and secondary medical complications compared to adults (17). This may be why they tend to possess less problem recognition and motivation for abstinence (18), which may make involvement in an abstinence-focused organization, like AA, less relevant or appealing. Youth also may face additional barriers related to their life-context, since the majority of meetings are comprised of older adults with the average age of an AA member reported to be 46 years old (19). Consequently, issues pertinent to this older life stage (e.g., marital relations, children, employment problems) may not be perceived as relevant to adolescents (20). One study found that youth who attended AA/NA meetings that were also attended by at least some other adolescents attended more often, became more involved, and had better substance use outcomes (21). Other youth barriers may be related to AA-specific content. Many youth, for example, do not perceive a need for complete, life-long, abstinence from all substances (especially alcohol, when this has not been a drug of choice), and anecdotal reports suggest some youth experience discomfort with the emphasis on spirituality and spiritual growth explicit in 12-step literature and meetings (22, 23).

Despite widespread clinical referral to community AA and NA groups, little has been documented about the types of barriers youth experience in accessing and utilizing these free, and potentially helpful, community resources. More specific information would enhance our understanding of youth perceptions and experiences and inform the tailoring of continuing care recommendations. How do youth actually perceive and/or experience AA/NA? What do they find helpful or unhelpful? Why do many youth discontinue AA/NA attendance?

To begin to answer these questions, we explored quantitative and qualitative self-report data from two treated samples of AA/NA-exposed youth. The first sample (Study 1) consists of 74 adolescents followed for six months following 12-step-oriented private residential treatment in the southwest U.S. For these youth, we assessed what young AA/NA participants liked about AA/NA, how important and helpful they perceived AA/NA to be in their recovery efforts, and how connected they felt to AA/NA groups. The second sample (Study 2) consists of 377 adolescents entering private residential SUD treatment in the northeastern U.S. These youth were asked about potential barriers to AA/NA participation. Specifically, on entry to treatment youths with prior AA/NA participation were asked to report reasons for AA/NA discontinuation. In this second sample, we also compared demographic, clinical and familial characteristics of prior AA/NA participants and non-participants.

## Method

### Study 1

**Participants**—Participants (N=74) were consecutive admissions to a private, short-term adolescent-specific residential SUD treatment facility in the greater metropolitan San Diego, California area. The average age of the cohort was approximately 16 years old ( $M=15.9$ ,  $SD= 1.19$ ; range 14-18) and nearly two thirds were female (62%). All patients met criteria for a DSM SUD diagnosis. The sample was mostly Caucasian (70%), but approximately one in five was Hispanic (18%) and the remainder was African American and Asian/Pacific Islander (8% and 4%, respectively). More details about this sample can be found elsewhere (e.g., (15)).

**Procedure**—Consecutive admissions to the residential SUD treatment facility were asked to participate in a prospective study examining treatment response and outcomes in relation to a variety of demographic, clinical and social factors. Youth were interviewed during treatment and again at 3 months and 6 months post discharge. Youths were reimbursed \$10 and \$25 for the 3- and 6-month interviews, respectively. As part of this study, youth were asked to what extent they found AA/NA helpful to their recovery efforts, how connected they felt to AA/NA, and what they liked best about participating in 12-step groups. The responses to this open-ended question were subsequently clustered into eight, rationally-derived, domains by the lead author. Because 12-step meetings function as “groups”, many of the responses reported by the adolescents fitted into domains that corresponded well with dimensions of group psychotherapy theory (24), such as instillation of hope, universality, catharsis, and imparting of information. Consequently, several of Yalom's (24) labels and constructs were employed, where applicable, to help categorize responses. To investigate support for the face validity and reliability of the constructed categories a confirmatory test was conducted whereby two additional raters (one masters-level researcher and one clinical psychology doctoral student) were asked independently to place the self-reported items into the best-fitting categories. Inter-rater agreement for this task (corrected for chance agreement) was found to be extremely high ( $Kappa = .76$ ,  $p<.0001$ ).

### Study 1 Results

During the first and second 3-month period following treatment discharge, 72% (n=53) and 54% (n=40) of the sample, respectively, attended at least one AA/NA meeting. As reported previously, there was a significant relationship between greater AA/NA participation and more abstinent days at follow-up among these youth (15). Table 1 shows the ratings describing how important youth perceived AA/NA groups to be to their recovery, how helpful they perceived these groups to be, and how connected youth felt to AA/NA groups. Overall, as indicated by mean ratings, youth tended to perceive these groups as quite

important and most thought they were somewhat or very helpful. Many youth also reported feeling quite connected to AA/NA groups.

### What do youth like about AA/NA?

The domains, sample response items, and the frequency of responses falling into each category, ranked from highest to lowest, can be seen in table 2. The most common responses (n=17) fell into the “universality” category (not feeling so alone with their problems) and the “positive attention/encouragement (support)” category (n=17), followed by “instillation of hope” (n=14), and the “none/negative” category (n=10). Interestingly, responses about AA-specific factors (e.g., working the steps, higher power, living one day at a time) were less frequent (n=4), suggesting more general, group-therapeutic, factors were more salient to these youth at this stage of their recovery and/or degree of post-treatment AA/NA exposure.

### Study 2

**Participants**—Participants in this sample (N=377) contained a broader age-range (12-21), were slightly older on average ( $M=16.5$  yrs old,  $SD=1.3$ ), with nearly half (49%) female. Ethnic composition was mostly Caucasian (81%) with a mixture of other ethnicities (5% Hispanic, 2% African American, 2% Asian, and 10% other). All participants in both samples met criteria for DSM-IV substance use disorder (SUD).

**Procedure**—Consecutive admissions were asked to complete an intake assessment (Adolescent Chemical Dependency Questionnaire [ACDQ]) as part of routine clinical care. As part of this assessment patients were asked about their prior AA/NA participation, if they had discontinued participation, and the reasons why. Youth were also asked whether any parent had utilized AA or NA fellowships. The reported reasons for discontinuing AA/NA participation were clustered into seven, rationally-derived, categories by the lead author. Again, as in Sample 1, face validity and reliability of the categories were investigated by asking the two raters to independently place the items into the domains. Inter-rater agreement (corrected for chance agreement) for this task was also found to be extremely high (Kappa = .86,  $p<.0001$ ). Consequently, the high inter-rater reliability for both samples indicates the domains have face validity, are reliable and reproducible, and captured all patients’ responses.

### Study 2 Results

Of the 377 individuals entering residential treatment included in this sample, just over one-third (37%; n=139) reported prior AA/NA participation. Patients with and without prior AA/NA participation were compared on: demographic (age, ethnicity, gender) clinical (prior SUD treatment, prior psychiatric treatment) and familial characteristics (family history of SUD treatment/AA/NA participation) using one-way Analysis of Variance (ANOVA) and Chi-square as indicated by data structure in order to explore profiles of youth associated with prior participation.

Compared to those without any prior AA/NA participation, youths who reported at least some participation were significantly older ( $p<.003$ ), were more likely to have had prior SUD treatment ( $p<.001$ ) and prior psychiatric treatment ( $p<.001$ ), and were more likely to report having a parent who had attended AA/NA ( $p=.001$ ). Females and non-Caucasian youths were not found to differ from males or Caucasian youths, respectively, in their prior participation ( $ps>.09$ ; see table 3).

## Reasons for Discontinuation

Of those reporting prior AA/NA participation (n=139), 45% (n=62) reported reasons for ceasing AA/NA attendance. These reasons were reviewed by the authors and subsequently clustered into seven categories (see table 4). As shown in table 4, the self-reported reasons for discontinuing AA/NA attendance fell into seven major categories. The most frequently reported reasons were related to boredom/lack of fit (n=16) or having relapsed (n=15). Next most common were reasons pertaining to lack of perceived need/low intrinsic motivation (n=9) and an external contingency for attending being removed (n=8). Notable was the absence of any explicit mention of the spiritual/quasi-religious content of 12-step fellowships as a reason for discontinuing.

## Discussion

These studies examined two clinical samples of AA/NA-exposed youth in order to gain a more informed perspective about youth perceptions of, and experiences with, 12-step fellowships. In the first study, attendees reported that AA/NA groups were, on the whole, quite important to attend and helpful in their recovery efforts. However, just over one in four youths perceived AA/NA participation to be of little or no importance. The sample, on average, also reported feeling quite connected to groups, although about one in five youth reported little or no feeling of connection. Aspects of 12-step meetings that youth reported liking the best were related to general group-therapeutic, and not 12-step specific, processes, and the major reasons given for discontinuing AA/NA attendance were related to boredom/lack of fit and relapse.

Aspects of 12-step meetings that youths reported they liked most centered around AA/NA non-specific, social dynamic processes related to identification with other members' experiences, obtaining encouragement and recovery support, and gaining a more hopeful perspective of the future. These social processes tend to reduce feelings of shame, alienation, depression and isolation (24). As mentioned briefly above, these findings suggest that general group therapeutic factors may be more salient for these youth at this stage of their recovery and/or degree of post-treatment AA/NA exposure. Consequently, clinicians emphasizing 12-step participation as part of a relapse prevention plan and wishing to enhance positive 12-step expectancies may find it helpful to inform youth that one of the early AA/NA participation benefits that other adolescents have reported is feeling less lonely and more supported in their recovery efforts.

Of note was that AA/NA specific program content, such as use of 12 step practices and principles, belief in a higher power, or core AA philosophy (e.g., "one day at a time"), was not perceived as a major AA/NA benefit by many youth. Similar to the general developmental model of therapeutic change proposed by Howard and colleagues (25), it is likely that the response to AA/NA participation also may follow a sequential process beginning with "remoralization" (the enhancement of subjective wellbeing), "remediation" (symptomatic relief), and "rehabilitation" (the unlearning of pervasive, maladaptive patterns of functioning and the learning of more adaptive approaches). This implies that initial impressions and experiences of AA/NA may change over time with more 12-step-specific benefits related to working the steps and helping others, for example, occurring only after a lengthier engagement beyond the six-month time frame studied herein. Alternatively, it may be that the more 12-step content aspects of these organizations do not appeal to youth at any stage of their recovery. Instead, it is the more general, supportive, and dynamic, social processes that continue to influence youth AA/NA engagement. More study is needed to examine how these perceptions and therapeutic mechanisms of AA/NA may change over time for this age group.

Related to therapeutic benefits from AA/NA, are recent insights into the nature of adolescent brain development, the potentially greater impact that alcohol/drug use may have on the developing brain (26, 27), and how both brain maturation and drug-related insults during this life stage may relate to involvement in, and any benefits derived from, 12-step groups. For example, the frontal lobes are involved in higher psychological processes, such as planning, decision making, abstract reasoning, conceptual understanding, self-regulation, and social functioning (28, 29), and these are also susceptible to damage from substance use. Consequently, some youths early in their recovery may find it difficult to relate to others, to process and understand certain 12-step concepts and paradoxes, or be able to engage in the thorough self-assessment and self-appraisal needed in working some of the 12-steps. Conversely, the circuits that coordinate behaviors, help with decision making and impulse control, and help with appropriate reactions in different situations, are shaped and formed during the teen years. This plasticity is influenced by an individual's interactions with the social environment (30). Thus, observation of, and interaction with, positive and supportive sober role-models, available in 12-step fellowships, may assist with adaptive brain developments. Also, such positive social interactions, may serve to increase dopamine receptor availability, which may, in turn, be protective against further drug use (31). Continuing advances in social neuroscience will help our understanding of how social interactions such as these, influence brain function and development among youth (32).

Also noteworthy is that many youth reported there was nothing at all that they liked about AA/NA. This was the fourth most common response category suggesting that a substantial proportion of youth do not perceive any benefit from attendance. Such youth may require an adapted Twelve-Step Facilitation (TSF; (33)) or alternative ongoing continuing care approach.

Findings from the second study comparing pre-treatment AA/NA attendees with non-attendees on various demographic and clinical indices suggest younger, treatment naïve, adolescents without parental AA/NA experience may require a different TSF, or alternative continuing care, approach compared to older, treatment-experienced, youth with parents personally familiar with 12-step approaches. Noteworthy was the finding that prior parental involvement in AA/NA groups was associated with youth attendance, suggesting that having influential individuals with 12-step experience in the social network may further enhance the likelihood of patients' participation.

The most common reasons reported for discontinuing AA/NA attendance were related to boredom/lack of fit and relapse. Since most AA/NA members are much older on average than the sample studied here (19, 34), the perceived lack of fit may be related to developmentally-based differences that influence the content of what is discussed at meetings. For example, youth tend to be less severe in their addiction, have less severe medical complications, and are less likely to be married, have children, or be employed. Recovery focused discussion of these topics may seem irrelevant to many youths. For example, prior work with treated adolescents suggests that the presence of at least some similar-aged, younger participants at 12-step meetings may help engage youth and influence more favorable substance use trajectories (21). Hence, locating and directing youth to meetings also attended by other youth may improve adolescent AA/NA engagement and related benefits. Further qualitative work is needed to examine the extent to which a perceived lack of fit may be explained by such differences.

Relapse was also reported by many youth as the major reason for discontinuing AA/NA participation. Given that AA/NA participation is associated with improved treatment outcomes for youth (10, 11, 35), it may be prudent to assess, discuss, and correct potential misperceptions regarding any perceived unacceptability of continuing AA/NA following a

relapse (36). Other commonly reported reasons for discontinuing AA/NA, suggest youth would benefit from a greater focus on substance use problem and risk recognition and motivational enhancement, and in removing logistical barriers, such as helping them find transportation to meetings. Notably, the spiritual/quasi-religious content of 12-step fellowships was not explicitly reported at all as a reason for discontinuing participation, suggesting this prominent aspect of 12-step organizations may not be a salient barrier for youth.

### Limitations

Findings from the current study should be viewed in light of several limitations. In the first sample, youth were all AA/NA attendees. Thus, their reports do not reflect general attitudes about AA/NA held by treated youth. Furthermore, reasons for AA/NA discontinuation were elicited from youth who were currently in treatment limiting the range of potential responses; there may be additional more positive reasons for discontinuing (e.g., felt my recovery was stable enough to no longer need AA). Also, youth were not asked what they did not like about AA/NA meetings. In the second sample, self-reported responses were obtained by less than half of prior attendees (45%) in response to the question “If you stopped going to AA/NA why was that?” We do not know whether those who did not report a reason were actually still attending prior to treatment or whether they had discontinued attending and just did not report a reason for doing so. Furthermore, there may be multiple reasons for discontinuing, but youth listed only one reason (although this may be the major reason). Also, the responses to the open-ended questions given by youth, while informative, tended to lack detail and may have not been given a great deal of thought. More in-depth interviewing may help further elucidate youth experiences (e.g., (37)). It is also difficult to know whether these self-reported reasons for discontinuation are specific to AA/NA or represent general resistance to any formal or informal SUD treatment efforts among these youth.

### Conclusion

Referral to 12-step groups following formal SUD treatment is common in the U.S. (3, 5) and, although evidence is limited, available cross-sectional and prospective studies of treated youth suggest AA/NA participation may be helpful for some adolescents in their substance use change efforts (10, 11, 13, 35). However, despite referral and clinical encouragement to participate in AA and NA, many youths do not attend at all or struggle to make as much use of these freely available community resources as some clinicians would like. This study systematically examined adolescents’ self-reported perceptions and experiences of AA/NA in an attempt to understand some of the barriers youth face in utilizing these predominantly adult organizations. We believe these findings provide important insights into youth experiences with 12-step groups that point to specific content areas that can form the basis for therapeutic discussion and intervention in treatment programs wishing to facilitate youth AA/NA participation as an ongoing adjunct to formal care.

### References

1. SAMHSA. Treatment Admissions for Alcohol Abuse, Alone and with a Drug Problem. Office of Applied Studies; Arlington: 2005.
2. Bukstein, OG. Adolescent Substance Abuse: Assessment, Prevention, and Treatment. Wiley and Sons, Inc.; New York: 1995.
3. Drug Strategies. Treating teens: A guide to adolescent programs. Drug Strategies; Washington, D.C: 2003.
4. Humphreys K. Clinicians’ referral and matching of substance abuse patients to self-help groups after treatment. *Psychiatr Serv.* 1997; 48:1445–1449. [PubMed: 9355173]

5. Humphreys, K. *Circles of Recovery: Self-help organizations for addictions*. Cambridge University Press; Cambridge, UK: 2004.
6. Emrick, CD.; Tonigan, JS.; Montgomery, H.; Little, L. Alcoholics Anonymous: What is currently known?. In: Barbara, E.; McCrady, E.; Miller, WR., editors. *Research on Alcoholics Anonymous: Opportunities and Alternatives*. Rutgers Center for Alcohol Studies; New Brunswick, NJ: 1993. p. 41-76.
7. Kelly JF. Self-help for substance use disorders: History, effectiveness, knowledge gaps, and research opportunities. *Clin Psychol Rev*. 2003; 23:639–663. [PubMed: 12971904]
8. Kelly JF, Stout R, Zywiak W, Schneider R: A 3-year study of addiction mutual-help group participation following intensive outpatient treatment. *Alcohol Clin Exp Res*. 2006; 30:1381–1392. [PubMed: 16899041]
9. Tonigan JS, Toscova R, Miller WR: Meta-analysis of the literature on Alcoholics Anonymous: Sample and study characteristics moderate findings. *J Stud Alcohol*. 1996; 57:65–72. [PubMed: 8747503]
10. Kelly JF, Myers MG. Adolescents' participation in alcoholics anonymous and narcotics anonymous: Review, implications, and future directions. *J Psychoactive Drugs*. in press.
11. Alford GS, Koehler RA, Leonard J. Alcoholics Anonymous-Narcotics Anonymous model inpatient treatment of chemically dependent adolescents: A 2-year outcome study. *J Stud Alcohol*. 1991; 52:118–126. [PubMed: 2016871]
12. Brown, SA.; Mott, MA.; Myers, MG. Adolescent alcohol and drug treatment outcome.. In: Ronald, E.; Watson, R., editors. *Drug and Alcohol Abuse Prevention. Drug and Alcohol Abuse Reviews*. Humana Press, Inc.; Clifton, NJ: 1990. p. 373-403.
13. Hsieh S, Hoffman NG, Hollister DC. The Relationship between pre-, during-, post-treatment factors, and adolescent substance abuse behaviors. *Addict Behav*. 1998; 23:477–488. [PubMed: 9698976]
14. Kelly JF, Myers MG, Brown SA. A multivariate process model of adolescent 12-Step attendance and substance use outcome following inpatient treatment. *Psychol Addict Behav*. 2000; 14:376–389. [PubMed: 11130156]
15. Kelly JF, Myers MG, Brown SA. Do adolescents affiliate with 12-Step groups? A multivariate process model of effects. *J Stud Alcohol*. 2002; 63:293–304. [PubMed: 12086130]
16. Mason MJ, Luckey B. Young adults in alcohol-other drug treatment: An understudied population. *Alcohol Treat Q*. 2003; 21:17–32.
17. Stewart DG, Brown SA. Withdrawal and dependency symptoms among adolescent alcohol and drug abusers. *Addiction*. 1995; 90:627–635. [PubMed: 7795499]
18. Tims FM, Dennis ML, Hamilton N, Buchan BJ, Diamond GS, Funk R, Brantley LB. Characteristics and problems of 600 adolescent marijuana abusers in outpatient treatment. *Addiction*. 2002; 97:46–57. [PubMed: 12460128]
19. Alcoholics Anonymous. 2004 Membership Survey. Alcoholics Anonymous, editor. World Services Incorporated.; New York: 2005.
20. Deas D, Riggs P, Langenbucher J, Goldman M, Brown S. Adolescents are not adults: Developmental considerations in alcohol users. *Alcohol Clin Exp Res*. 2000; 24:232–237. [PubMed: 10698377]
21. Kelly JF, Myers MG, Brown SA. The effects of age composition of 12-Step groups on adolescent 12-Step participation and substance use outcome. *Journal of Child and Adolescent Substance Abuse*. 2005; 15:67–76.
22. Alcoholics Anonymous. *Twelve Steps and Twelve Traditions*. Alcoholics Anonymous World Services; New York: 1953.
23. Alcoholics Anonymous. *Alcoholics Anonymous: The Story of How Thousands of Men and Women Have Recovered from Alcoholism*. Alcoholics Anonymous World Services; New York: 2001.
24. Yalom, ID. *Theory and Practice of Group Psychotherapy*. Basic Books; New York: 1995.
25. Howard KI, Lueger RJ, Maling MS, Martinovich Z: A phase model of psychotherapy outcome: Causal mediation of change. *J Consult Clin Psychol*. 1993; 61:678–685. [PubMed: 8370864]



26. Tapert SF, Brown GG, Baratta MV, Brown SA. fMRI BOLD response to alcohol stimuli in alcohol dependent young women. *Addict Behav.* 2004; 29:33–50. [PubMed: 14667419]
27. Tapert SF, Brown GG, Kindermann SS, Cheung EH, Frank LR, Brown SA. fMRI measurement of brain dysfunction in alcohol-dependent young women. *Alcohol Clin Exp Res.* 2001; 25:236–245. [PubMed: 11236838]
28. Stuss DT, Levine B. Adult clinical neuropsychology: Lessons from studies of the frontal lobes. *Annu Rev Psychol.* 2002; 53:401–433. [PubMed: 11752491]
29. Tapert SF, Brown SA. Neuropsychological correlates of adolescent substance abuse: Four-year outcomes. *J Int Neuropsychol Soc.* 1999; 5:481–493. [PubMed: 10561928]
30. Seeman P. Images in neuroscience. Brain development, X: pruning during development. *Am J Psychiatry.* 1999; 156:168. [PubMed: 9989550]
31. Morgan D, Grant KA, Mach RH, Gage HD, Ehrenkauf RL, Kaplan JR, Prioleau OA, Nader SH, Buchheimer N, Nader MA. Social dominance in monkeys: Dopamine D2 receptors and cocaine self-administration. *Nat Neurosci.* 2002; 5:169–174. [PubMed: 11802171]
32. Raichle, ME. Social neuroscience: A perspective.. In: Cacioppo, JT.; Visser, PS.; Pickett, CL., editors. *Social Neuroscience: People Thinking about People.* MIT Press; Cambridge, MA: 2005. p. 287-296.
33. Nowinski, J.; Baker, S.; Carroll, KM. Twelve-Step Facilitation Therapy Manual: A Clinical Research Guide for Therapists Treating Individuals with Alcohol Abuse and Dependence, in NIAAA Project MATCH Monograph Series Vol. 1. DHHS Pub. No. (ADM)92-1893. National Institute on Alcohol Abuse and Alcoholism; Rockville, MD: 1992.
34. Narcotics Anonymous World Services I. 2002.
35. Kennedy BP, Minami M. The Beech Hill Hospital/Outward Bound Adolescent Chemical Dependency Treatment Program. *J Subst Abuse Treat.* 1993; 10:395–406. [PubMed: 8411298]
36. Scott CK, Dennis ML, Foss MA. Utilizing recovery management checkups to shorten the cycle of relapse, treatment reentry, and recovery. *Drug Alcohol Depend.* 2005; 78:325–338. [PubMed: 15893164]
37. Passetti, LL. Adolescents' perceptions of the 12 steps and 12-step philosophy, in Joint Meeting on Adolescent Treatment Effectiveness. Baltimore, MD: 2006.

**Table 1**

Study 1. Youth Ratings of the importance and helpfulness of AA/NA meetings to their recovery efforts and the how connected they felt to AA/NA groups

	Low (1-3)	Medium (4-6)	High (7-10)	M (SD)
How important is it for you to participate in 12-Step recovery groups?	26	16	58	6.5 (3.3)
How helpful do you think 12-Step groups are to you?	16	26	58	6.9 (3.2)
How connected do you feel to 12-Step groups?	21	26	53	6.3 (3.2)

All rating scales 1-10, with higher numbers reflecting more favorable attitude/experience to AA/NA meetings

**Table 2**

Sample 1. Frequency of youth reports, clustered by domain, regarding what youth liked best about attending AA/NA

<b>Response Domain</b>	<b>Domain Description</b>	<b>Example</b>	<b>Frequency</b>	<b>Rank</b>
<i>Universality</i>	Not feeling alone; a sense of belonging	“To know I am not the only one with this problem”	17	1
<i>Positive Attention/Encouragement (Support)</i>	Getting support from others – that other members care about them	“They always care what I have to say”	17	1
<i>Instillation of hope</i>	Recovery is possible; feeling better; seeing/hearing others who have recovered; feeling inspired	“Hearing stories of how other people got through”	14	3
<i>None/negative</i>	Items placed in this category pertain to generally negative responses like “nothing”	“Nothing”	10	4
<i>Catharsis</i>	A place to talk, express feelings, thoughts etc.	“Get my feelings out”	7	5
<i>Imparting of information/ Interpersonal learning</i>	Learning skills, getting information and advice from others	“Principles for everyday life”	4	6
<i>AA-specific Content/Philosophy</i>	AA content-specifics, such as working the 12 steps, spirituality, having an AA sponsor, using AA philosophy/slogans	“One day at a time philosophy”	4	6
<i>Other</i>	Providing structure, group cohesion, insight, cognitive restructuring	“Something to do to stay busy”	1	8

**Table 3**

Study 2. Pre-Treatment AA/NA participation in relation to Demographic, Clinical and Family Variables

Variable		Prior AA/NA n=139 (37%)	No AA/NA n=238 (63%)	Sig. Test	p
Age		16.8 (1.3)	16.4 (1.3)	F=8.98	<.003
Gender	<i>Females</i>	49%	52%	$\chi^2=29$	.59
	<i>Males</i>	51%	48%		
Ethnicity	<i>Whites</i>	81%	89%	$\chi^2=2.95$	.09
	<i>Other</i>	19%	11%		
Prior SUD Tx		69%	24%	$\chi^2=71.6$	<.001
Prior $\square$ Tx		79%	61%	$\chi^2=12.6$	<.001
Parent AA		20%	8%	$\chi^2=10.9$	.001

**Table 4**

## Study 2. Reported reasons for stopping AA/NA attendance

<b>Reason Domain</b>	<b>Domain Description</b>	<b>Example</b>	<b>Frequency</b>	<b>Rank</b>
<i>Boredom/Lack of fit</i>	Bored or not feeling like AA/NA is of relevance or interest	"Lost interest"	16	1
<i>Relapsed</i>	Returned to drinking/drug use	"I started drinking and using drugs again"	15	2
<i>No perceived need/low intrinsic motivation</i>	Not believing one has a substance-related problem or see no need for AA/NA	"I felt like I didn't need AA"	9	3
<i>External Attendance Contingency Removed/extrinsic motivation</i>	Attended only as part of a treatment program or a parent or criminal justice official stated they need no longer attend	"I left the hospital"	8	3
<i>Logistical</i>	Lack of access to transportation	"No ride"	7	3
<i>Entered Formal Treatment</i>	Entered a formal treatment program or to access other help	"To get help"	4	6
<i>Iatrogenic/Other</i>	AA/NA made specific or related problems worse (instead of better)	"AA seems like a cult"	3	7