

# The Design of Social Support Networks for Offenders in Outpatient Drug Treatment

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**IT HAS OFTEN BEEN** noted that the most significant challenge in treating drug dependence is not the attainment of initial abstinence, but avoiding relapse after treatment has started. Marlatt (1985) estimated that fully one-third of individuals treated for alcoholism relapse in the first 90 days after completion of treatment. In a review of treatment effectiveness, Nathan (1986) noted that one to two years after treatment, fewer than half of patients maintain sobriety. Figures for relapse from drug treatment are comparable, especially among criminal offender populations (Hoffman & Miller, 1993). Despite increased attention to the problem of relapse in the last decade, few interventions have been able to effectively counter the relapse phenomenon.

In order to address the relapse issue, treatment programs have long sought to bolster clients' social support networks (Strauss & Falkin, 2001). There is empirical support for this approach with released offenders. Broome et al. (1997), for instance, examined predictors of drug-related problems and rearrest in probationers. Results indicated that social network, in the form of drug-using peers, was a direct contributor to both recidivism and problems related to drug use.

In practice, efforts to increase social support are informal or non-systematic, are not the main focus of the intervention, and occur in the context of overall case management (e.g., Buckley & Bigelow, 1992). Additionally, the rationale for social and family support is usually not discussed: the provision of social support, particularly family support, is usually taken for granted as beneficial. This article will review the existing literature on the design and implementation of

social support networks as treatments or adjuncts to treatment for drug-dependent individuals, especially those who have been involved in the criminal justice system. The authors will argue that social support networks are more than just sources of emotional support; they can apply behavioral contingencies that can change the client's drug using and prosocial behavior after conventional treatment is finished.

## Social Support—A Behavioral Analysis

A behavioral formulation of the treatment and relapse processes suggests that individuals derive reinforcement for abstinence behavior during treatment, but that after leaving the treatment milieu, they once again encounter stimuli for drug use, and drug use is reinforced (e.g., Bigelow, Brooner & Silverman, 1998). Data indicate that alcohol and drug abusers derive less reinforcement from non-drug activities in their home environments than do non-drug users. Surveys of activities in these groups show that drug users spend much less time than do non-drug users engaged in non-drug-involved leisure or social activities. Van Etten et al. (1998), for example, compared cocaine users with age-, sex-, and SES-matched controls. Cocaine users reported significantly lower frequency of engagement in positive-mood-related activities than did the controls. Carroll (1996) therefore concluded that the availability of non-drug reinforcement could reduce the acquisition and use of illicit drugs.

The same appears to be true of alcohol abusers. In their examination of the Behavioral Choice Model of substance misuse, Vuchinich and Tucker (Tucker et al., 1985; Vuchinich & Tucker, 1988) reviewed the literature on alcohol consumption and the availability of alternative reinforcers in alcohol dependent and abusing individuals. They concluded that drinking is increased when access to reinforcers alternative to alcohol is constrained. Conversely, when access to alcohol is constrained, consumption is decreased.

The treatment setting, especially in prison-based treatment, effectively constrains access to drugs, thus reducing consumption and (theoretically) making engagement in treatment-relevant activities more likely. In addition, some of the treatment activities will be inherently reinforcing, increasing the likelihood that clients will engage in non-drug activities. When people leave treatment, however, access to drugs is typically less constrained, and they often experience few reinforcers for sobriety to compete with reinforcement from drug taking.

One potent source of reinforcement for drug use is the client's social network. It has often been noted that the social milieu of a drug abuser serves to support the drug use of those in the network (e.g., Schroeder, et al., 2001; Steinglass & Wolin, 1974). General social support per se, however, has at best proven to be only a modest predictor of long-term substance abuse treatment outcomes (e.g., Dobkin et al., 2002; Goehl, Nunes, Quitkin & Hilton, 1993; Moos, Finney, & Cronkite, 1990; Wasserman, Stewart & Delucchi, 2001). It would appear that the target of support is critical. Longabaugh and Beattie (1985, 1986),

among others, differentiated drinking-specific support from general support, and coined the term "network support for drinking." This network support construct, designating the amount of support (reinforcement) an individual receives for drinking or drug use, has been found to be predictive of poor outcomes in treatment-seeking patients (Beattie, Longabaugh, & Fava, 1992; Havassy, Hall & Wasserman, 1991; Havassy, Wasserman & Hall, 1995; Longabaugh et al., 1993).

To date the construct of network support has mostly been used to describe a network supportive of drug use. Goehl (1993), for instance, noted in a study of 70 methadone patients that having at least one drug user among those closest to the patient was highly predictive of positive urine screenings. Sung, Tabachnick, and Feng (2000) tested several theories for continued drug use in 366 convicted heroin users. The hypothesis receiving the strongest empirical support was the social network hypothesis, which asserts that different subgroups of drug users develop their own subcultures that support drug use. Similar results were found by Schroeder et al. (2001). Drug use by members of the social networks of 236 heroin and cocaine users was the strongest predictor of continued drug use by the participants. Among women drug offenders, the most significant member of the social network is the partner. Use of drugs by the partner has been among the strongest predictors of drug use by women offenders (e.g., Falkin & Strauss, 2003; Pivnick et al., 1994; O'Dell, Turner & Weaver, 1998).

It follows that if a social network that reinforces drug use leads to more drug use, then networks that reinforce being clean and sober should yield greater drug abstinence. There is indirect evidence for this proposition. Gordon and Zrull (1991), for instance, collected social network data on 156 alcoholic patients and recontacted them one year after their discharge from inpatient treatment. The authors concluded that the active support (including participation in treatment) of non-drinking friends and coworkers was the most influential factor in recovery. Most predictive of poor outcomes was encouragement of drinking by coworkers, some of whom were co-drinkers. In a study of predictors of relapse in treatment for cocaine, McMahon (2001) reported that quality of the social support network improved in those who maintained abstinence, whereas relapsers failed to report this improvement in quality.

## Constructing Social Networks for Treatment

### *12-Step Fellowships: Alcoholics Anonymous, Narcotics Anonymous*

Perhaps the clearest example of a constructed social network that supports sobriety is Alcoholics Anonymous (AA), along with its various 12-step cousins Narcotics Anonymous (NA), Cocaine Anonymous (CA), and so forth. These fellowship programs, whether they are spiritually based or secular, provide ready-made sobriety-supporting networks, and fulfill several of the conditions required of a behavioral choice model of relapse prevention (Tucker, et al., 1990). The programs provide alternative activities to drinking or drug use, they constrain access to drugs (at least for the time when the person is attending a meeting), and they reinforce sober behavior.

Several studies have provided support for the efficacy of AA or similar groups in reducing drug use. Emrick (1987) found that AA members achieve abstinence at a higher rate than do professionally treated alcoholics, and that AA participants who are more active in the fellowship program do as well as or better than less active participants. In another study, it was found that those who attended a social club for recovering alcoholics drank less and improved more in general life functioning (Mallams, Godley, Hall & Meyers, 1982). Data are sparse regarding effectiveness of fellowship programs for released criminal offenders. The findings of a meta-analysis of data from the Correctional Drug Abuse Treatment Effectiveness project conducted by Pearson and Lipton (1999) suggested, however, that promising aftercare treatments included 12-step programs, as well as cognitive-behavioral programs and methadone maintenance. The findings of these studies are consistent with the notion that social support for sobriety can enhance treatment outcome, but none of them looked specifically at the level of support for drinking in their clients' social networks.

Project MATCH (Project MATCH Research Group, 1977) provided some of the most detailed information on social networks in alcoholics to date. With over 1700 clients, this multisite study of matching patients to treatment collected a variety of social network measures. Analyses of the Project MATCH data set indicate that clients whose social networks were supportive of drinking had worse outcomes than those whose social network did not support drinking (Longabaugh et al., 1998). A high level of network support for drinking was also related to a decreased likelihood of involvement in AA.

Additionally, results from Project MATCH indicated that among those with high network

support for drinking, clients who had been assigned to the Twelve Step Facilitation treatment (TSF; Nowinski, Baker, & Carroll, 1992), in which attendance at AA was emphasized, had better outcomes than clients assigned to Motivational Enhancement Therapy (MET). One mechanism for this effect was that treatment with TSF resulted in greater involvement in AA, even among those with high network support for drinking. Thus, AA involvement by clients with high network support for drinking appeared to be at least a partial mediator of the observed matching effect. Clients with both high network support for drinking and high AA involvement had more abstinence than those with network support for drinking who were not involved in AA. In contrast, for clients whose social network did not support continued drinking, AA involvement had much less impact on outcome.

Kaskutas, Bond, and Humphreys (2002) also explored changes in outcomes and social networks as a function of AA attendance. These investigators followed 654 alcoholic men and women for up to one year after their presentation to treatment. Abstinence at follow-up was significantly predicted by involvement in AA, fewer pro-drinking influences in one's social network, and greater support for abstinence from people encountered in AA.

A similar study by Humphreys and colleagues (Humphreys, Mankowski, Mood & Finney, 1999; Humphreys & Noke, 1997) employed 2,337 treated drug-dependent men, many of whom were criminal offenders. Involvement in mutual help fellowships (e.g., NA) predicted reduced substance use at one-year follow-up. This relationship was mediated by enhanced friendship networks, characterized by the proportion of friends who abstain from substance use and by increase in active coping responses.

The implication of these findings is that fellowship programs like AA or NA are effective in helping decrease substance use, and that their effectiveness is in part due to the delivery of social networks that discourage drug use and promote prosocial change. A treatment that encourages a change of social network from one that is supportive of drinking or drug use to one that is supportive of sobriety will be effective. And it will be more effective for those whose pretreatment environments are initially more supportive of drug use.

### *Community Reinforcement Approaches*

One approach that directly seeks to construct supportive environmental and social networks is referred to as the Community Reinforcement Approach (CRA). CRA began as a package of

treatment components intended to provide the patient with support for abstinence from substance use in all aspects of his life (Hunt & Azrin, 1973), including the vocational, recreational, and family environments, as well as the social network. Components of the original program included job finding, marital therapy, leisure counseling, reinforcer access counseling, a social club, and home visits. Over time Azrin and his colleagues added other components, including a buddy system, motivational counseling and drink refusal instruction (Azrin, 1976; Azrin et al., 1982). The central behavioral rationale for CRA is to reinforce the drug user's sobriety and encourage the development of activities incompatible with drug use, such as participation in recreational and social activities and employment. Possibly because of its all-encompassing nature, CRA has garnered large treatment effects in clinical trials conducted by the Azrin group, and is considered to be among those substance abuse treatment modalities that have the best empirical evidence for effectiveness (Miller et al., 1995; Miller & Wilbourne, 2002).

The most recent large-scale study of CRA in alcoholics was reported by Miller et al. (2001). In this study four basic treatments were compared: "Traditional treatment," an eclectic, alcohol counseling-based approach; traditional treatment plus disulfiram; CRA plus disulfiram; and CRA without disulfiram. The CRA treatment included functional analysis of antecedents and consequences of drinking, problem-solving training, social skills training, social counseling, vocational counseling, behavioral marital therapy for those with spouses or partners, relaxation training, and drink refusal rehearsal. Overall, results indicated that the CRA groups reported lower drinking levels than did the traditional treatment groups in the first six months of follow-up, but that the traditional groups achieved more continuous abstinence. Both types of treatments yielded similar good results in months 16 to 24 of the follow-up period. Interestingly, the authors attribute the advantage of the traditional treatments in achieving abstinence to its reliance on referral of clients to AA.

Treatment of drug abuse with CRA has produced some success. Higgins, et al. (1995) reported on the effectiveness at one year of two trials in which community reinforcement approaches were compared to traditional drug counseling (Higgins et al., 1993; Higgins, Budney, Bickel, Foerg, et al., 1994). The CRA treatments contained five basic elements: 1) minimizing contacts with antecedents to drug use; 2) development of new recreational activities to take the place of drug use; 3) vocational counseling; 4) relationship counseling for those with spouses or partners;

and 5) disulfiram treatment for those with concurrent alcohol problems. All treatment groups improved through treatment and into the follow-up in terms of cocaine use and indicators on the Addiction Severity Index (ASI; McLellan, et al., 1985). Some efficacy differences did emerge, and these supported CRA conditions, particularly during treatment, when CRA was combined with vouchers that were dispensed contingent upon production of clean urines.

Bickel et al. (1997) compared a CRA-plus-vouchers approach to traditional drug counseling with opiate-dependent subjects in buprenorphine detoxification. Subjects in this study earned vouchers contingent upon both production of clean urines and completion of CRA-related activities. Subjects in the CRA-plus-vouchers condition were more likely to complete the detoxification protocol, and produced more weeks of continuous abstinence than did subjects in the drug counseling condition. It is not clear from this study to what degree completion of CRA activities specifically accounted for the results, as opposed to reinforcement for clean urines.

Abbott et al. (1998) studied 181 opiate-dependent patients on methadone maintenance. Patients were randomized to 20 weeks of drug counseling, CRA, or CRA with relapse prevention. The combined CRA groups did significantly better than the standard group in terms of producing consecutive opiate-negative urinalysis at three weeks, and greater improvements in ASI drug composite scores at six months. These results support the benefit of CRA strategies with opiate-dependent subjects on methadone maintenance, even without voucher incentives.

Higgins and Abbott (2001) concluded that CRA has made contributions to the treatment of drug users apart from that of vouchers. Still, they note that most of the success of CRA with cocaine and opiate abusers has come from conditions that combined CRA with voucher incentives, and they suggest that voucher incentives be considered as an additional component to CRA treatment of drug users.

No formal studies of CRA with criminal offenders have been published, although elements of CRA (e.g., vocational counseling, relationship counseling) have been added to traditional outpatient counseling programs for parolees, and the outcomes of these additions will be discussed later. Indeed, relatively few clinical trials of any sort have employed CRA outside of those reported by Azrin and his colleagues, and by Higgins and his colleagues in Vermont. This is possibly due to the relatively complicated logistics and high costs of implementing multiple behavioral components (Kadden, 2001).

Given the many components that comprise

CRA interventions, it is not clear what elements are responsible for any treatment gains seen. Although CRA is intended to change the drug user's environment, especially the social network, no investigators of CRA have yet provided evidence that these changes occur. This is particularly a concern for the cocaine and opiate samples, in which vouchers were used. The trend indicated that CRA yielded no better results than traditional drug counseling for these samples, unless voucher incentives were added to the protocol. Until specific data regarding environmental change are provided, it will not be possible to know whether CRA is actually accomplishing its purpose.

### *Network Therapy and Network Support Treatment*

Like CRA, Network Therapy and Network Support Treatment are specifically designed to construct new social networks for the substance user. Unlike CRA, these interventions focus more on the social network of friends, family, and associates than on the vocational, recreational, or other aspects of the abuser's environment.

Network Therapy was developed by Galanter (1986; 1993) in response to what he perceived as a gap in medical treatment for substance abuse. The treatment comprises three elements. The first, and most innovative, is engagement of the patient's natural social network in the treatment setting. This entails bringing the spouse, parents, best friends, and so on into the office or treatment unit and having them all participate in discussions of the patient's treatment along with the patient and therapist. The second element is cognitive-behavioral relapse prevention training. This element focuses on identifying triggers for substance use and behavioral techniques for avoiding them. The third element is the orchestration of resources to provide community reinforcement. This treatment differs from CRA in that it is the therapist who provides all of these services to patients, whereas CRA typically employs several people to fulfill the multiple roles.

Possibly the most important aspect of Network Therapy is the inclusion of the patient's entire social network (or at least the most important supportive people in that network) in the therapy sessions. These supportive network members may not be substance abusers themselves. According to Galanter, Keller, and Dermatis (1997), the average number of participating supportive members is 2.3, and if possible, they all meet together with the patient and therapist to establish common goals and strategies to meet those goals. A typical treatment would include two sessions per week for 24 weeks, with one of the sessions per week involving the network, and the



other involving just the therapist and patient.

No controlled outcome studies have been conducted using Network Therapy. In clinical trials without control groups, Galanter has reported that Network Therapy has resulted in significant retention in treatment and decreases in substance use measured by self-report and by biological assays (e.g., Galanter, 1994; Galanter et al., 1997). One published study employed a control group. Keller and Galanter (1999) trained community counselors to implement Network Therapy with cocaine abusing clients. Chart reviews were used to compare 10 clients engaged in Network Therapy with 20 clients who had been treated in the community with traditional counseling. The Network Therapy patients had fewer positive urine toxicology results over the course of 24 weeks of treatment than did the treatment-as-usual controls (88 percent negative v. 66 percent negative), but rates of treatment retention did not differ between the groups.

No systematic research has been conducted on possible mechanisms of action of Network Therapy. A study by Galanter, Dermatis, Keller, and Trujillo (2002), however, does implicate network change, or at least network involvement, in treatment gains. Forty-seven cocaine dependent clients were treated with Network Therapy by psychiatric resident physicians. Through the 24 weeks of treatment, 73 percent of all observed urine samples were negative for cocaine, and 45 percent of the patients had negative urines in the last three weeks of the treatment period. Positive outcomes were most closely associated with the number of network treatment sessions conducted, and not the number of individual sessions. This finding, while rather weak given the lack of controls, implies that good outcomes were not simply a function of therapist attention, but that supportive network members were also applying contingencies on patient behavior.

Network Support Treatment (NST; Litt & Kabela, 2002) is currently the subject of a large clinical trial. NST is similar to both CRA and Network Therapy in that it aims to change the patient's social environment to make it more supportive of abstinence. It differs from the other treatments in that it does not attempt to alter all aspects of the patient's environment directly. Instead, it relies on teaching the patient to make changes in his or her social network of friends, family, and associates, particularly by using AA, and thereby places fewer demands on therapists and resources than do CRA or Network Therapy. The treatment actually draws heavily on the Twelve-Step Facilitation (TSF) treatment of Nowinski et al. (1992), used in Project MATCH.

Treatment consists of 12 one-hour sessions, and is intended to help the client change his or

her social support network so that it is more supportive of abstinence and less supportive of drinking and drug use. Because AA is a ubiquitous source of social support, and one that is tapped by most treatment services already, encouraging attendance at AA is used as an efficient way to quickly engage clients in a supportive network, much like TSF (Nowinski et al., 1992). The program consists of six core sessions, plus six elective sessions that are chosen by the therapist and the patient together. Core topics include a Program Introduction, Acceptance, Surrender, Getting Active, People-Places-Things, and Termination. Additional material includes assertiveness training and particularly conjoint sessions with a spouse or partner.

Recovery tasks take the form of going to AA meetings, exploring ways to change one's network of support (e.g., by joining a club, taking a second job, etc.), or other assignments discussed jointly by the therapist and the participant. These other assignments may include activities that are not necessarily AA-related but that may improve social networks. Such activities include altering social networks in terms of Education (e.g., obtaining information about a course at a community college, whereby the subject may meet new friends), Employment (e.g., searching for and applying for a job in a non-drinking environment); Family (e.g., family outing); Housing; Social/Recreational (e.g., re-establishing contact with non-drinking friends and relatives), etc.

The clinical trial in which Network Support Treatment is currently being tested will evaluate both treatment outcomes and mechanisms of treatment. The mechanism of treatment is expected to be observable change in the patient's social network, including the number of non-substance using persons in the network versus the number of substance using persons.

Although both Network Therapy and NST are conceptually appealing, neither has been used with offender populations. The addition of social network support elements to existing treatments has been used with released offenders, however.

### *Social Network Elements in Outpatient Treatment for Released Offenders*

As with drug users in general, clinicians and researchers have frequently sought to introduce elements of social network change into treatment with substance-using offenders. Most frequently these attempts include couples or marital therapy. Fals-Stewart, Birchler, and O'Farrell (1996), for example, randomized 80 substance abusing patients (85 percent of whom were released offenders) to traditional drug counseling or to counseling plus adjunctive behavioral couples

therapy (BCT). Patients in the counseling + BCT condition reported better relationship outcomes (better dyadic adjustment), fewer days of drug use, fewer hospitalizations, and fewer drug-related arrests through the 12 months of follow-up than did the control patients. These differences disappeared toward the end of the 12 months, however.

Kidorf, Brooner, and King (1997) devised a program to enlist not only spouses or partners, but any drug-free significant other into treatment for opiate dependent subjects, many of whom were referred by the correctional system. Access to methadone maintenance was made dependent on the patient's identifying at least one drug-free significant other, and then on bringing that person to treatment. Although no outcome data were provided, the authors report that virtually all of their methadone-maintained opiate addicts were able to identify and engage at least one drug-free significant other. A similar program was described by McGrath (1986), wherein rebates were offered to DWI offenders who brought family and friends to educational programs. McGrath reported that the family and friends were often positive influences on the offenders.

In a review of the corrections treatment literature, Haddock (1990) concluded that relatively few treatment modalities meet adequate standards of empirical support and practical financial considerations. Treatments or adjuncts that have met these tests include social skills training, stress management, behavioral self-control training, and family therapy.

## **Conclusion**

By conservative estimates, at least half of the jail detainees in the U.S. are drug-addicted or abuse drugs (U.S. Department of Justice, 1992). Successful efforts have been made to incorporate family and community support into in-prison treatment efforts, resulting in significant drops in recidivism and drug use (e.g., Lemieux, 2002). However, aside from attempts to establish spousal or family support, there are few published accounts of efforts to change the social network of released offenders in outpatient treatment. The existing evidence suggests that outpatient interventions that encourage offender-patients to involve family members or significant others are likely to yield less drug use and lower rates of re-arrest. These results provide a powerful rationale for further efforts to change the social networks of released offenders in outpatient treatment, and thereby create environments that will reinforce abstinence and decrease rates of recidivism.

## References

- Abbott, P.J., Weller, S.B., Delaney, H.D., & Moore, B.A. (1998). Community reinforcement approach in the treatment of opiate addicts. *American Journal of Drug & Alcohol Abuse*, 24, 17-30.
- Azrin, N. (1976). Improvements in the community reinforcement approach to alcoholism. *Behaviour Research and Therapy*, 14, 339-348.
- Azrin, N., Sisson, R.W., Meyers, R.J. & Godley, M. (1982). Alcoholism treatment by disulfiram and community reinforcement therapy. *Journal of Behavior Therapy and Experimental Psychiatry*, 13, 1-5-112.
- Beattie, M.C., Longabaugh, R. & Fava, J. (1992). Assessment of alcohol-related workplace activities: development and testing of "Your Workplace." *Journal of Studies on Alcohol*, 53, 469-475.
- Broome, K.M., Knight, D.K., Knight, K., Hiller, M.L., & Simpson, D.D. (1997). Peer, family, and motivational influences on drug treatment process and recidivism for probationers. *Journal of Clinical Psychology*, 53, 387-397.
- Brownell, K.D., Marlatt, G.A., Lichtenstein, E., & Wilson, G.T. (1986). Understanding and preventing relapse. *American Psychologist*, 41, 756-782.
- Bigelow, G.E., Brooner, R.K. & Silverman, K. (1986). Competing motivations: drug reinforcement vs. non-drug reinforcement. *Journal of Psychopharmacology*, 12, 8-14.
- Buckley, R. & Bigelow, D.A. (1992). The multi-service network: reaching the unserved multi-problem individual. *Community Mental Health Journal*, 28, 43-50.
- Carroll, M.E. (1996). Reducing drug abuse by enriching the environment with alternative non-drug reinforcers. In L. Green & J. Kagel (Eds.), *Advances in behavioral economics* (Vol 3, pp. 37-68). Norwood, NJ: Ablex.
- Carroll, M.E., Lac, S.T., & Nygaard, S.L. (1989). A concurrently available nondrug reinforcer prevents the acquisition or decreases the maintenance of cocaine-reinforced behavior. *Psychopharmacology*, 97, 23-29.
- Dobkin, P.L., De Civita, M., Paraherakis, A. & Gill, K. (2002). The role of functional social support in treatment retention and outcomes among outpatient adult substance abusers. *Addiction*, 97, 347-356.
- Emrick, C.D. (1987). Alcoholics Anonymous: affiliation processes and effectiveness as treatment. *Alcoholism: Clinical & Experimental Research*, 11, 416-23.
- Epstein, L.H. (1992). Role of Behavior Theory in Behavioral Medicine. *Journal of Consulting & Clinical Psychology*, 60, 493-498.
- Falkin, G. P. & Strauss, S.M. (2003). Social supporters and drug use enablers. A dilemma for women in recovery. *Addictive Behaviors*, 28, 141-155.
- Galanter, M. (1986). Social network therapy for cocaine dependence. *Advances in Alcoholism and Substance Abuse*, 6 (2), 159-175.
- Galanter, M. (1993). *Network therapy for addiction: A new approach*. New York: Basic Books.
- Galanter, M., Keller, D.S., & Dermatis, H. (1997). Network therapy for addiction: assessment of the clinical outcome of training. *American Journal of Drug and Alcohol Abuse*, 23, 355-367.
- Goehl, L., Nunes, E., Quitkin, F., & Hilton, I. (1993). Social networks and methadone treatment outcome. The costs and benefits of social ties. *American Journal of Drug and Alcohol Abuse*, 19, 251-262.
- Haddock, B.D. (1990). Substance abuse counseling in community corrections: A primer. *Journal of Addictions & Offender Counseling*, 11, 2-12.
- Havassy, B.E., Hall, S.M., & Wasserman, D.A. (1991). Social support and relapse: commonalities among alcoholics, opiate users and cigarette smokers. *Addictive Behaviors*, 16, 235-246.
- Havassy, B.E., Wasserman, D.A., & Hall, S.M. (1995). Social relationships and abstinence from cocaine in an American treatment sample. *Addiction*, 90, 699-710.
- Higgins, S.T., Budney, A.J., Bickel, W.K., Foerg, F.E., Donham, R., & Badger, G.J. (1994). Incentives improve outcome in outpatient behavioral treatment of cocaine dependence. *Archives of General Psychiatry*, 51, 568-576.
- Higgins, S.T., Budney, A.J., Bickel, W.K., Badger, G.J., Foerg, F.E., & Ogden, D. (1995). Outpatient behavioral treatment for cocaine dependence: one-year outcome. *Experimental and Clinical Psychopharmacology*, 3, 205-212.
- Higgins, S.T., Budney, A.J., Bickel, W.K., Hughes, J.R., Foerg, F., & Badger, G. (1993). Achieving cocaine abstinence with a behavioral approach. *American Journal of Psychiatry*, 150, 763-769.
- Higgins, S.T. & Abbott, P.J. (2001) CRA and treatment of cocaine and opioid dependence. In R.J. Meyers & W.R. Miller (Eds.), *Addictions: A community reinforcement approach to addiction treatment*. (pp. 123-146). Cambridge England: Cambridge University Press.
- Hoffman, N.G., & Miller, N.S. (1993). Perspectives on effective treatment for alcohol and drug disorders. *Recent Advances in Addictive Disorders*, 16, 127-140.
- Humphreys, K., Mankowski, E.S., Moos, R.H. & Finney, J.W. (1999). Do enhanced friendship networks and active coping mediate the effect of self-help groups on substance abuse? *Annals of Behavioral Medicine*, 21, 54-60.
- Humphreys, K. & Noke, J.M. (1997). The influence of posttreatment mutual help groups participation on the friendship networks of substance abuse patients. *American Journal of Community Psychology*, 25, 1-16.
- Hunt, G.M. & Azrin, N.H. (1973). A community reinforcement approach to alcoholism. *Behaviour Research and Therapy*, 11, 91-104.
- Kadden, R.M. (2001). Behavioral and cognitive-behavioral treatments for alcoholism: research opportunities. *Addictive Behaviors*, 26, 489-507.
- Kaskutas, L.A., Bond, J. & Humphreys, K. (2002). Social networks as mediators of the effects of Alcoholics Anonymous. *Addiction*, 97, 891-900.
- Keller, D. S. & Galanter, M. (1999). Technology transfer of network therapy to community-based addictions counselors. *Journal of Substance Abuse Treatment*, 16, 183-189.

- Kidorf, M., Brooner, R.K., & King, V.L. (1997). Motivating methadone patients to include drug-free significant others in treatment: a behavioral intervention. *Journal of Substance Abuse Treatment, 14*, 23-28.
- Lemieux, C.M. (2002). Social support among offenders with substance abuse problems: Overlooked and underused? *Journal of Addictions and Offender Counseling, 23*, 41-57.
- Litt, M.D. & Kabela, E. (2002). *Network Support Treatment. Therapist's manual*. Unpublished manuscript. Farmington, CT: University of Connecticut Health Center.
- Longabaugh, R. & Beattie, M.C. (1985). Optimizing the cost-effectiveness of treatment for alcohol abusers. In B.S. McCrady, N.E. Noel & T. Nirenberg (eds.), *Future directions in alcohol abuse treatment research* (pp. 104-136). NIAAA Research Monograph, No. 15, DHHS Publication No. Adm. 5-1322. Washington, DC: US Government Printing Office.
- Longabaugh, R. & Beattie, M.C. (1986). Social investment, environmental support and treatment outcomes of alcoholics. *Alcohol Health and Research World, Summer*, 64-66.
- Longabaugh, R., Beattie, M.C., Noel, N.E., Stout, R.L. & Malloy, P. (1993). The effect of social investment on treatment outcome. *Journal of Studies on Alcohol, 54*, 465-478.
- Longabaugh, R., Wirtz, P.W., Zweben, A., & Stout, R.L. (1998). Network support for drinking, Alcoholics Anonymous and long-term matching effects. *Addiction, 93*, 1313-1333.
- Mallams, J.H., Godley, M.D., Hall, G.M. & Meyers, R.J. (1982). A social-systems approach to resocializing alcoholics in the community. *Journal of Studies on Alcohol, 43*, 1115-23.
- McGrath, R.J. (1986). An education program for collaterals of DWI offenders. *Alcoholism Treatment Quarterly, 3*(2), 139-151.
- McLellan, A.T., Luborsky, L., Cacciola, J., Griffith, J., Evans, F., Barr, H.L., & O'Brien, C.P. (1985). New data from the Addiction Severity Index: Reliability and validity in three centers. *The Journal of Nervous and Mental Disease, 173*, 412-423.
- Miller, W.R., Brown, J.M., Simpson, T.L., Handmaker, N.S., Bien, T.H., Luckie, L.F., Montgomery, H.A., Hester, R.K., & Tonigan, J.S. (1995). What works? A methodological analysis of the alcohol treatment outcome literature. In R.K. Hester & W.R. Miller (Eds.), *Handbook of alcoholism treatment approaches: effective alternatives*. (2nd ed.) (pp. 12-44). Boston: Allyn and Bacon.
- Miller, W.R., Meyers, R.J., Tonigan, J.S. & Grant, K.A. (2001). Community reinforcement and traditional approaches: Findings of a controlled trial. In R.J. Meyers & W.R. Miller (Eds.), *Addictions: A community reinforcement approach to addiction treatment*. (pp. 79-103). Cambridge, England: Cambridge University Press.
- Miller, W.R. & Rollnick, S. (2002). *Motivational Interviewing: Preparing People for Change*. New York: Guilford.
- Miller, W.R. & Wilbourne, P.L. (2002). Mesa Grande: a methodological analysis of clinical trials of treatments for alcohol use disorders. *Addiction, 97*, 265-277.
- Moos, R.H., Finney, J.W., & Cronkite, R.C. (1990). Evaluating and improving alcoholism treatment programs. In R.H. Moos, J.W. Finney & R.C. Cronkite (Eds.), *Alcoholism treatment: Context, process and outcome*. (pp. 3-13).
- Nowinski, J., Baker, S., & Carroll, K. (1992). *Twelve Step Facilitation Therapy Manual: A Clinical research Guide for Therapists Treating Individuals with Alcohol Abuse and Dependence*. NIAAA Project MATCH Monograph, Vol. 1, DHHS Publication No. (ADM) 92-1893, Washington, D.C.: U.S. Government Printing Office.
- O'Dell, K.J., Turner, N.H. & Weaver, G.D. (1998). Women in recovery from drug misuse: An exploratory study of their social networks and social support. *Substance Use and Misuse, 33*, 1721-1734.
- Pearson, F.S., Lipton, D.S. (1999). A meta-analytic review of the effectiveness of corrections-based treatments for drug abuse. *Prison Journal, 79*, 384-410.
- Pivnick, A., Jacobson, A., Eric, K., Doll, L. & Drucker, E. (1994). AIDS, HIV infections and illicit drug use within inner-city families and social networks. *American Journal of Public Health, 84*, 271-274.
- Project MATCH Research Group. (1997). Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol, 58*, 7-29.
- Schroeder, J.R., Latkin, C.A., Hoover, D.R., Curry, A.D., Knowlton, A.R., & Celentano, D.D. (2001). Illicit drug use in one's social network and in one's neighborhood predicts individual heroin and cocaine use. *Annals of Epidemiology, 11*, 389-394.
- Steinglass, P. & Wolin, S. (1974). Explorations of a systems approach to alcoholism. *Archives of General Psychiatry, 31*, 527-532.
- Strauss, S.M. & Falkin, G.P. (2001). Social support systems of women offenders who use drugs: a focus on the mother-daughter relationship. *American Journal of Drug and Alcohol Abuse, 27*, 65-89.
- Sung, H., Tabachnick, C., Feng, L. (2000). Heroin injection among addicted felons: Testing extant theories. *Deviant Behavior, 21*, 381-406.
- Tucker, J.A., Vuchinich, R.E., & Harris, C.V. (1985). Determinants of substance abuse relapse. In M. Galizio & S.A. Maisto (Eds.), *Determinants of substance abuse: Biological, psychological, and environmental factors* (pp. 383-421). New York: Plenum.
- Tucker, J.A., Vuchinich, R.E., & Gladsjo, J.A. (1990). Environmental influences on relapse in substance use disorders. *International Journal of the Addictions, 25*(7A-8A), 1017-1050.
- Van Etten, M.L., Higgins, S.T., Budney, A.J. & Badger, G.J. (1998). Comparison of the frequency and enjoyability of pleasant events in cocaine abusers vs. non-abusers using a standardized behavioral inventory. *Addiction, 93*, 1669-1680.
- U.S. Department of Justice, Bureau of Justice Statistics (1992). *Sourcebook of criminal justice statistics - 1992*. Washington, DC: U.S. Government Printing Office.
- Vuchinich, R.E. & Tucker, J.A. (1988). Contributions from behavioral theories of choice to an analysis of alcohol abuse. *Journal of Abnormal Psychology, 97*, 181-195.
- Wasserman, D.A., Stewart, A.L. & Delucchi, K.L. (2001). Social support and abstinence from opiates and cocaine during opioid maintenance treatment. *Drug and Alcohol Dependence, 65*, 65-75.

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