Pergamon

0005-7967(95)00049-6

Behav. Res. Ther. Vol. 34, No. 1, pp. 41–46, 1996
Elsevier Science Ltd. Printed in Great Britain

Follow-up results of Supportive versus Behavioral Therapy for illicit drug use

N. H. AZRIN, R. ACIERNO, E. S. KOGAN, B. DONOHUE, V. A. BESALEL and P. T. MCMAHON

Center for Psychological Studies, Nova-Southeastern University 3301 College Avenue, Ft. Lauderdale, FL 33314, U.S.A.

(*Received 25 April 1995*)

Summary—Follow-up data (mean 9 months) were obtained for 74 subjects who had been treated for a mean of 8 months and 17 sessions in a controlled comparison of Behavioral vs Supportive Counselling for drug abuse. Based on urinalysis, self-report, and family report, all subjects (100%) were actively using drugs at pre-treatment. During the last month of treatment, 81% of the Supportive treatment subjects and 44% of the Behavioral treatment subjects were using drugs at least once. At the follow-up month, drugs were used at least once by 71% of the Supportive vs 42% of Behavioral subjects. When drug use was measured in terms of the number of days of use per month, Supportive counselled subjects did not decrease drug use either by the end of treatment or at follow-up; for Behavioral subjects, drug use decreased by 63% by the end of treatment and by 73% at follow-up. Alcohol use, and days worked/or in school showed a similar pattern of greater improvement for the Behavioral treatment being maintained at the follow-up. These results indicate a substantial treatment-specific reduction of drug usage that endures after treatment is discontinued. The present favorable results appear attributable to the inclusion of family/significant others in therapy and the use of reinforcement contingent on urinalysis results.

INTRODUCTION

Illicit drug use, a major societal problem, appears to resist psychological interventions. Indeed, after patients are released from inpatient settings, in which abstinence is artificially maintained, relapse seems inevitable (Gossop, Green, Phillips & Bradley, 1989). Yet, surprisingly, recent follow-up studies have shown a substantial reduction in drug usage for periods of 6 months to 4 yr after termination of large-scale treatment programs. The types of settings and interventions in which such gains have been noted include a crisis center or therapeutic community (Sheehan, Oppenheimer & Taylor, 1993), both inpatient or outpatient clinics with no specification of treatment type (Carrol, Power, Bryant & Rounsaville, 1993), a methadone plus "rehabilitation" program (e.g. Gossop *et al.*, 1989), a 12-step program incorporating reality therapy plus RET (Friedman, Schwartz & Utada, 1989), and an inpatient aversion therapy program (Frawley & Smith, 1992). The more appropriate conclusion appears to be that "everything works" rather than "nothing works". However, because none of these studies included a control group, the results are potentially due to the passage of time, or subject 'readiness' to discontinue drug use. Fortunately, some controlled studies do exist. McAuliffe (1990) included a no-treatment control group in a large-scale evaluation of a relapse prevention intervention and similarly found a substantial reduction in drug usage at follow-up that exceeded the reduction produced by the no-treatment control condition. As Eysenck (1993) has recently reiterated, however, a no-treatment control group does not control for non-specific factors such as therapist and patient expectancy, simple attendance at sessions, repeated assessment, etc. Several studies have now been conducted that included comparison groups receiving such 'active' treatments. Stephens, Roffman and Simpson (1994) employed a minimal treatment control group consisting of non-directive discussion with minimal input by the therapist and found no greater reduction of marijuana usage at follow-up for the active relapse prevention program than for the discussion group. Similarly, Woody, McLellan, Luborsky and O'Brien (1987) found that the number of days of opiate, stimulant, or depressant usage were decreased to the same extent by a minimal supportive program, as by the basic supportive program plus the addition of ITP psychodynamic, or cognitive behavior therapy. One might conclude, therefore, that the observed reduction of usage at follow-up was a product of non-specific factors, the specific nature of the treatment being irrelevant.

The question may be asked as to whether any observed reduction of drug usage during treatment itself, rather than at follow-up, can be attributed to specific treatment factors. Several controlled outcome studies provide data relevant to this question. Stephens *et al.* (1994) found that marijuana usage decreased to the same extent at the end of treatment for the minimal discussion counselling as for the intended more active relapse prevention therapy. Similarly, McLellan, Arndt, Metzger, Woody and O'Brien (1993) found that the number of days of opiate or cocaine use during treatment was reduced to the same extent in a minimal methadone program as it was in comparison programs with additional counselling by psychologists, psychiatrists, and family therapists. Carroll, Rounsaville and Gawin (1991) found no significant difference between ITP and cognitive behavioral therapy during treatment for opiate usage when all *Ss* were considered. Wells, Peterson, Gainey, Hawkins and Catalano (1994) found no difference in the number of days of either marijuana or cocaine use between a relapse prevention program and a 12-step program at the end of treatment nor at follow-up. Taken together, these results indicate that no treatment-specific reduction of drug usage occurs either at post-treatment or follow-up. It should be noted that, in many of these controlled outcome studies, the addition of the

psychological treatment usually did result in treatment-specific improvement in psychological and psycho-social factors and functioning, such as depression and unemployment, but not in drug usage *per se*.

Evidence for treatment-specific effects on drug usage has appeared recently in the controlled outcome study of cocaine usage by Higgins, Budney, Bickel, Hughes, Foerg and Badger (1993) in which a 12-step program was compared to a Behavioral program that consisted of contingency management and community reinforcement procedures (Hunt & Azrin, 1973) and included significant others in the program. The percentage of *Ss* abstinent from cocaine at the end of treatment was about 40% for the Behavioral condition vs about 3% for the comparison condition, however, no follow-up was conducted. Similar treatment-specific benefits have been found with another behavioral treatment which also included community-reinforcement and contingency features when compared to a Supportive Counselling program (Azrin, Donohue, Besalel, Kogan & Acierno, 1994a, Azrin, McMahon, Donohue, Besalel, Lapinski, Kogan, Acierno & Galloway, 1994b). The number of days of drug use, as well as the number of months of abstinence were improved to a greater extent by the Behavioral procedure than by the Supportive Counselling intervention. Again, no follow-up data were obtained; hence it is not known whether the observed treatment-specific benefits endured. To obtain a belated assessment of the durability of the treatment benefits, the present study provided a follow-up assessment of drug usage for the most recently treated *Ss* in the two above cited studies (Azrin *et al.*, 1994a, b), plus additional *Ss* treated under the same experimental design and procedures. Specifically, the present study compared drug usage at follow-up with that at pre-treatment and at the end of treatment to determine the extent to which treatment-specific benefits endure.

METHOD

Experimental design and assessment procedure

Details of the experimental design and assessment procedures are described fully in the previous reports (Azrin *et al.*, 1994a, b). Briefly, *Ss* were assigned randomly to either a Supportive-discussion counselling program or to a directive Behavioral program after a 1-month pre-treatment assessment period. The three principal components of the Behavioral program were: (1) stimulus control, including competing response training; (2) an urge control procedure for interrupting incipient drug use urges, thoughts, or actions; and (3) behavioral contracting, especially between the youth and their parents. The principal measures concerned the type and frequency of use of all commonly abused drugs, ascertained by analysis of urine taken at each session, self-report and report of significant others. Other measures taken were the frequency of drinking alcohol, school/work attendance, and police contacts. The follow-up assessment, which constitutes the principal contribution of the present study, was taken after a 6-month or more hiatus from treatment (mean 9-month follow-up). Nine *Ss* in the previous 12-month study (Azrin *et al.*, 1994b) had unilaterally discontinued counselling for a 6-month period before resuming participation. These 9 *Ss* were included in the present sample using the assessment measures on their return as the follow-up measures.

Subjects

The final study sample consisted of 74 *Ss*, 64 of whom provided end-of-treatment data in the previous two studies (Azrin *et al.*, 1994a, b), plus 10 additional *Ss* given the same procedures. The criteria for inclusion in data analyses were the same as in the previous studies: (1) a DSM-III-R diagnosis of psychoactive substance abuse; (2) active use of any drugs both during the month prior to baseline and during the month of baseline; and (3) completion of at least 4 treatment sessions. In addition, the present study utilized only that data available from *Ss* for whom at least 6 months had elapsed between follow-up assessment and the last treatment session. Also, to minimize the difficulty in contacting *Ss* who had been treated in the distant past, only those who initiated treatment within the previous two years were contacted. Table 1 presents demographic characteristics of the 74 *Ss*.

Approximately three-quarters of *Ss* were male, about three-quarters were adult, one-half were not employed or attending school, about one-third were mandated to obtain counselling by a public agency, and about one-eighth were minority

Table 1. Demographics of the 74 *Ss* in the study sample

Demographic	*N* or mean	% or Range
Subjects	74	100
Males	55	74.3%
Females	19	25.7%
Adults	57	77%
Youth	17	23%
Age (mean)	27 yr	13–43 yr
Age youth (mean)	16.1	13–18 yr
Education (mean)	11.5 yr	8–18 yr
Adult school drop-outs	23	31.1%
Employed/In school full time	36	49.6%
Not currently enrolled and not graduted	25	33.8%
Self-referred	52	70.3%
Agency mandated	22	29.7%
Minority persons	9	12.1%
Un-married and/or Non-cohabitating adults	31	41.9%
Cocaine users	44	59.5%
Marijuana users	54	73.0%
Benzodiazipine users	7	9.5%
Heroin users	1	1.4%
Other opiate users	3	4.1%
PCP users	1	1.4%
Other hallucinogen users	7	9.5%
Barbiturate users	3	4.1%
Methamphetamine users	1	1.4%
Other sedative/hypnotic users	2	2.7%

persons. Of the adults, slightly more than one-half were married, and approximately one-third had dropped out of school. Over one-half used cocaine, and about three-quarters used marijuana. None of the demographic characteristics listed in Table 1 were found to be significantly different between the two treatment conditions using either chi square or t-tests ($P > 0.05$).

Measures

During each session, reports were obtained from the *S* and his or her significant other regarding the type and frequency of drug use, days worked, school attendance, institutionalization, and police contacts. Drug use was measured in an exceedingly liberal manner. Specifically, use was considered to have occurred on a given day if *any* of the following were noted: (1) a positive report of use of any drug from the *S*; or (2) a positive report of use of any drug from a significant other; or (3) a positive urinalysis result representing use of any drug. Evidence of abstinence for a given month was therefore more conservative than in previous studies in that no report of usage from any of these sources could occur for the *S* to be categorized as abstinent.

RESULTS

Figure 1 shows drug usage in terms of the mean number of days of drug use during the 1-month period at pre-treatment, the last month of treatment, and the follow-up month. For the Supportive Counselling *Ss*, a within-groups paired t-test comparison showed that drug usage was unchanged from pre-treatment to the end of treatment ($t = 0.23$, $P = 0.82$), and increased slightly, but non-significantly ($t = 0.53$, $P = 0.60$) from the time of treatment termination to the follow-up period, remaining statistically unchanged at follow-up from the pre-treatment frequency ($t = 0.19$, $P = 0.44$). For the Behavioral Counselling *Ss*, drug usage decreased substantially from pre-treatment to the end of treatment ($t = 4.28$, $P < 0.001$), with a slight, non-significant ($t = 0.92$, $P = 0.72$) further decrease from the time of treatment termination to the follow-up period, the decrease from pre-treatment to follow-up remaining statistically significant ($t = 4.42$, $P < 0.001$).

A commonly employed alternative method of characterizing drug use involves dichotomous classification of each *S* according to use (even if only for 1 day) or non-use during a given month. Expressed in this manner, Fig. 2 presents the percentage of *Ss* in each treatment group using drugs on one or more days during the 1-month pre-treatment, post-treatment, and follow-up periods. The data in Fig. 2 show a large decrease in the number of Behavioral *Ss* using drugs during treatment and little change after treatment termination. The Supportive *Ss* decreased usage slightly during treatment. The differential treatment effects were maintained at follow-up. Chi-square tests indicated that Behavioral Counselling *Ss* were less likely to be using drugs (44%) than Supportive Counselling *Ss* (81%) in the final month of treatment [$\chi^2(1) = 9.93$, $P < 0.002$]. Similar results were noted in the month of follow-up, with 42% of Behavioral Counselling *Ss* vs 71% of Supportive Counselling *Ss* using drugs [$\chi^2(1) = 6.14$, $P < 0.02$].

A third common method of characterizing drug usage (Higgins *et al.*, 1993) is to also consider as drug users those *Ss* who were unreachable or declined to be assessed at follow-up. In the present study, there were 25 such *Ss*. When the data (assuming drug use) for these *Ss* were included (along with the *Ss* from whom a positive drug use report was obtained), little change was seen in the percentage of *Ss* using drugs for the Supportive Counselling condition (78.3% and 80.4%, at post-treatment and follow-up, respectively) and the Behavioral condition (49.1% and 52.8%, at post-treatment and follow-up, respectively). Chi-square tests for these data indicated that *Ss* receiving Behavioral Counselling were less likely to be using drugs as compared to *Ss* receiving Supportive Counselling at post-treatment [$\chi^2(1) = 8.97$, $P < 0.003$] and follow-up [$\chi^2(1) = 8.32$, $P < 0.004$].

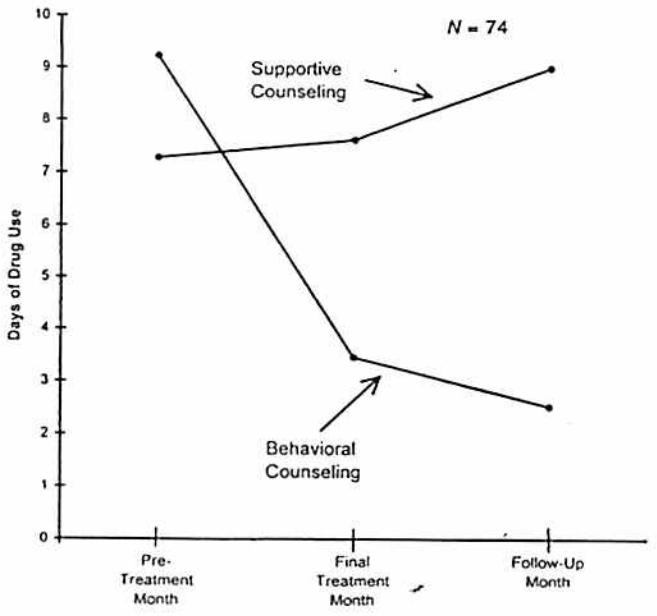

Fig. 1. Mean number of days of drug use during the one month period previous to treatment, the final month of treatment, and the follow-up month for the Supportive Counselling and Behavioral Counselling programs. Treatment was for a mean of 8 months; follow-up occurred a mean of 9 months after treatment termination.

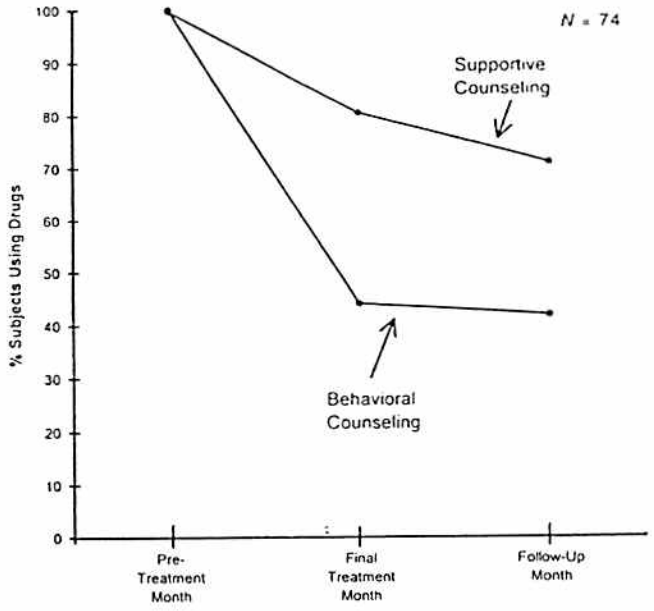

Fig. 2. Percentage of subjects using drugs at any time during the one month period pre-treatment, the final month of treatment, and the follow-up month for the Supportive and Behavioral Counselling programs. Treatment was for a mean of 8 months; follow-up occurred a mean of 9 months after treatment termination.

A fourth method of analysis of drug usage is to use only the results of the urinalyses. The disadvantages of this measure are that: (1) such analysis reveals usage over only a short time period; (2) *Ss* may not present for urinalysis at the scheduled time or may decline to provide a specimen; (3) the degree of usage may be insufficient to be detected by the urinalysis; and (4) statistical treatment of this categorical variable would lack the power of a continuous measure. The major advantage of urinalysis is, of course, its objectivity. Eighty-nine percent of the *Ss* provided usable urine specimens at the last month of treatment and 74% at the follow-up. Using only *Ss* from whom urinalysis was obtained during the last month of treatment, chi square analysis showed a greater likelihood of "drug-free urine" for the Behavioral *Ss* than for the Supportive *Ss* [$\chi^2(1)=6.05$, $P=0.014$]. At the follow-up assessment, the level of statistical significance was borderline [$\chi^2(1)=3.38$, $P<0.066$] in the same direction of greater abstinence for the Behavioral *Ss*.

Table 2 presents the mean and standard deviation for the number of days of drug use, the percent of days worked or in school, and the number of days of alcohol use over the 30 days preceding treatment, the final 30 days of treatment, and the 30 days at follow-up for the two treatment conditions. For all three measures, the Behavioral treatment showed significantly greater improvement than did the Supportive Counselling treatment at post-treatment relative to pre-treatment, and at follow-up relative to pre-treatment, but not at follow-up relative to post-treatment. In absolute terms, drug use in *Ss* receiving Supportive Counselling remained at about 8 days per month; alcohol use remained at about 5 days per month; and school/work attendance *decreased* from about 63% at pre-treatment to 55% at follow-up. For the Behavioral treatment, drug use decreased progressively from about 9 days per month at pre-treatment to about 2.5 days per month at follow-up; alcohol use similarly decreased progressively from 8 days per month at pre-treatment to about 4 days per month at follow-up; and school/work attendance increased from about 50% at pre-treatment to about 80% at post-treatment, but decreased to an intermediate level, 68%, at follow-up. (For the school/work measure, the percentage of days of possible attendance, rather than the number of days of attendance was used since vacations and holidays variably reduced the possible number of days available for school/work in a given month.)

Several other measures were scheduled to be taken, [e.g. the Beck Depression Inventory (Beck, Ward, Mendelsohn, Mock & Erbaugh, 1961), the Marital Happiness Scale (Azrin, Naster & Jones, 1973)], but missing data precluded

Table 2. Mean (standard deviation) number of days of drug or alcohol use and the mean (standard deviation) percentage of days worked or in school during the 1-month period pre-treatment, post-treatment, and at follow-up. *t*-tests are for between-group comparisons of change scores

	Behavioral treatment			Supportive treatment			*t* (*p*)		
	Pre-Tx	Post-Tx	FU	Pre-Tx	Post-Tx	FU	Pre vs Post	Pre vs FU	Post vs FU
Drug use	9.23	3.46	2.53	7.28	7.62	9.0	3.02***	3.29***	NS
($\bar{x}$ days/month)	(7.9)	(6.4)	(5.6)	(8.1)	(9.7)	(11.0)			
Work/school	51.8	80.3	67.5	63.0	64.6	54.5	2.69***	2.14*	NS
(% attendance)	(43.2)	(30.9)	(44.1)	(37.9)	(44.6)	(45.8)			
Alcohol use	8.08	4.87	3.88	4.18	5.62	4.95	2.90***	2.54*	NS
($\bar{x}$ days/month)	(8.8)	(7.1)	(7.1)	(7.2)	(8.4)	(8.4)			

*$P<0.05$, **$P<0.02$, ***$P<0.01$, NS not significant different.
t calculated with Fisher's exact test for correlated measures comparing behavioral vs supportive treatment.

meaningful analysis. Two additional measures obtained consistently were the number of police contacts and the number of days institutionalized, but these occurred with such low frequency as to make most comparative analyses meaningless. The mean number of police contacts was less than once per month for both conditions at all three assessment periods, and the mean number of days institutionalized was similarly less than once per month at all assessment points, except for an increase to 4.77 days per month for Supportive Counselling *Ss* at follow-up ($P < 0.05$).

Duration of treatment and follow-up

The mean number of sessions attended for the entire study sample was 16. A mean of 16.4 sessions were attended for *Ss* receiving the Behavioral intervention and 17.7 sessions for *Ss* receiving Supportive Counselling. This difference was not statistically significant ($t = 0.48$, $P > 0.63$). Similarly, the mean number of months of treatment (8.2 months for Behavioral *Ss* and 7.6 months for Supportive Counselling *Ss*) was not significantly different ($t = 0.62$, $P > 0.61$) between groups. The average duration between the final treatment session and follow-up was 9.0 months for the total sample, 8.5 months for the Behavioral condition, and 9.7 months for the Supportive Counselling condition, the difference between conditions again not attaining statistical significance ($t = 1.20$, $P > 0.23$).

Study drop-outs

As noted above, 25 *Ss* could not be located for follow-up assessment (10 in the Behavioral condition and 15 in the Supportive Counselling condition) for an overall data retrieval of 75%. Chi-square analysis indicated that this drop-out occurrence was not differentially significant between conditions [$\chi^2(1) = 2.46$, $P = 0.116$]. A *t*-test was performed on the pre-treatment number of days of drug use to assess possible differences in the extent of drug usage between the 25 drop-outs and the 74 remaining *Ss*. The mean number of days of drug use was 9.5 for the 25 drop-outs and 8.4 for the 74 study completers (non-significant difference $t = 0.542$, $P > 0.54$).

DISCUSSION

The principal question posed by this study was whether the treatment-specific effect of the Behavioral program endured after treatment had been discontinued. The results indicate that the effect did endure. Whether measured in terms of days of drug use, or months of abstinence, or when only urinalyses were used, or when the unreachable *Ss* were included in the data analysis, less usage occurred for the Behavioral vs Supportive treatment at the follow-up assessment at a statistically significant or near significant level.

The magnitude of the effect may be considered to be clinically, as well as statistically, significant: at follow-up the level of usage relative to the Supportive Counselling condition was 72% less when measured in terms of the number of days of usage, and 29% less in terms of the percentage of *Ss* using at any time during the follow-up month.

Of special importance is the finding that the long-term reduction of usage was treatment-specific, that is, the reduction was relative to that observed with an active treatment comparison program, and not only relative to the pre-treatment level. As also very recently noted by Wells, Peterson, Gainey, Hawkins and Catalano, (1994), previous studies have obtained a reduction of drug usage relative to pre-treatment, but not when compared with any active treatment program, indicating that the effect was likely attributable to general factors such as regression to the mean, subject readiness for abstinence, placebo effects, measurement reactivity, data retrieval selectivity, etc. The only other treatment program to have obtained a treatment-specific reduction was that of Higgins *et al.* (1993). The possible basis for the treatment-specific benefit may be revealed by examining the features distinctive to these two programs. One major difference is that both programs included family members and/or significant others in the therapy process, bringing their influence to bear directly on the drug users in their natural environment. A second major difference is the use of direct contingencies of reinforcement by the therapist/family and/or significant others on drug usage as determined, in part, objectively by urinalysis. None of the other treatment programs appears to have used these two procedures singly or in combination. In the absence of these two procedures, other procedures do not seem to have been sufficient when compared with some other type of treatment: neither a behavioral relapse prevention program (Stephens *et al.*, 1994; Wells *et al.*, 1994) nor ITP psychodynamic or cognitive behavior therapy (Woody *et al.*, 1987), nor general counselling by psychiatrists, psychologists, or family therapists (McLellan *et al.*, 1993), nor 12-step type programs (Higgins *et al.*, 1993; Wells *et al.*, 1994). The Higgins *et al.* (1993) study demonstrated that drug usage decreased during treatment when the above two social and contingency procedures were used; the present results indicate the continued reduction at follow-up as well. A plausible explanation of the favorable follow-up results is that the involved family/significant others continued to exert influence after treatment was terminated.

A cautionary note in interpreting the present results is that the present experimental design was not typical of the usual format of a fixed number of treatment sessions preceding a follow-up period of fixed duration for all *Ss*. Rather, the post facto decision to obtain follow-up information: (a) allowed the number of treatment sessions to be variable in this open-ended protocol; (b) allowed the duration of the no-treatment follow-up period to be variable (6 months to 17 months); (c) included some *Ss* whose treatment termination was self-initiated; and (d) included only those who had initiated treatment within 2 yr of the follow-up assessment. Although these factors do not constitute a systematic bias regarding the results toward one of the two present treatment programs, the traditional type of follow-up design would have been preferable in which these factors were standardized or controlled *a priori*.

Acknowledgement—This study was supported by the National Institute of Drug Abuse, Grant No. DA05295.

REFERENCES

Azrin, N. H., Naster, B. J. & Jones, R. J. (1973). Reciprocity counselling: A rapid learning-based procedure for marital counselling. *Behaviour Research and Therapy*, *11*, 365–382.

Azrin, N. H., Donohue, B., Besalel, V., Kogan, E. & Acierno, R. (1994a). Youth drug abuse treatment: A controlled outcome study. *Journal of Child and Adolescent Drug Abuse*, *3*, 1–16.

Azrin, N. H., McMahon, P., Donohue, B., Besalel, V., Lapinski, K., Kogan, E., Acierno, R. & Galloway, E. (1994b). Behavior therapy for drug abuse: a controlled treatment-outcome study. *Behaviour Research and Therapy, 32*, 857–866.

Beck, A. T., Ward, C. H., Mendelsohn, M., Mock, J. & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561–571.

Carroll, K., Rounsaville, B. & Gawin, F. (1991). A comparative trial of psychotherapies for ambulatory cocaine abusers: Relapse prevention and interpersonal psychotherapy. *American Journal of Drug and Alcohol Abuse, 17*, 229–247.

Carroll, K. M., Power, M. D., Bryant, K. & Rounsaville, B. J. (1993). One-year follow-up status of treatment-seeking cocaine abusers: Psychopathology and dependence severity as predictors of outcome. *The Journal of Nervous and Mental Disease, 181*, 71–79.

Eysenck, H. J. (1993). Forty years on: The outcome problem in psychotherapy revisited. In Giles, T. R. (Ed.), *Handbook of effective psychotherapy* (pp.3–20). New York: Plenum Press.

Frawley, P. & Smith, J. (1992). One-year follow-up after multimodal inpatient treatment for cocaine and methamphetamine dependencies. *Journal of Substance Abuse Treatment, 9*, 271–286.

Friedman, A. S., Schwartz, R. & Utada, A. (1989). Outcome of a unique youth drug abuse program: A follow-up study of clients of Straight, Inc. *Journal of Substance Abuse Treatment, 6*, 259–268.

Gossop, M., Green, L., Phillips, G. & Bradley, B. (1989). Lapse, relapse, and survival among opiate addicts after treatment: A prospective follow-up study. *British Journal of Psychiatry, 154*, 348–353.

Higgins, S., Budney, A., Bickel, W., Hughes, J., Foerg, F. & Badger, G. (1993). Achieving cocaine abstinence with a behavioral approach. *American Journal of Psychiatry, 150*, 763–769.

Hunt, G. M. & Azrin, N. H. (1973). A community-reinforcement approach to alcoholism. *Behaviour Research and Therapy, 11*, 91–104.

McAuliffe, W. (1990). A randomized controlled trial of recovery training and self-help for opioid addicts in New England and Hong Kong. *Journal of Psychoactive Drugs, 22*, 197–209.

McLellan, A. T., Arndt, I. O., Metzger, D. S., Woody, G. E. & O'Brien, C. P. (1993). The effects of psychosocial services in substance abuse treatment. *Journal of the American Medical Association, 269*, 1953–1959.

Sheehan, M., Oppenheimer, E. & Taylor, C. (1993). Opiate users and the first years after treatment: Outcome analysis of the proportion of follow-up time spent in abstinence. *Addiction, 88*, 1679–1689.

Stephens, R. S., Roffman, A. & Simpson, E. E. (1994). Treating adult marijuana dependence: A test of the relapse prevention model. *Journal of Consulting and Clinical Psychology, 62*, 92–99.

Wells, E. A., Peterson, P. L., Gainey, R. R., Hawkins, J. D. & Catalano, R. F. (1994). Outpatient treatment for cocaine abuse: A controlled comparison of relapse prevention and twelve-step approaches. *American Journal of Drug and Alcohol Abuse, 20*, 1–17.

Woody, G. E., McLellan, A. T., Luborsky, L. & O'Brien, P. (1987). Twelve-month follow-up of psychotherapy for opiate dependence. *American Journal of Psychiatry, 144*, 590–596.